Form 5500 Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	**Annual Return/Report of Employee Benefit Plan** This form is required to be filed for employee benefit plans under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and sections 6057(b) and 6058(a) of the Internal Revenue Code (the Code). **▸ Complete all entries in accordance with the instructions to the Form 5500.**	OMB Nos. 1210-0110 1210-0089 **2018** **This Form is Open to Public Inspection**

Part I Annual Report Identification Information

For calendar plan year 2018 or fiscal plan year beginning 05/01/2018 and ending 04/30/2019

A This return/report is for:
- [X] a multiemployer plan
- [ ] a multiple-employer plan (Filers checking this box must attach a list of participating employer information in accordance with the form instructions.)
- [ ] a single-employer plan
- [ ] a DFE (specify) ____

B This return/report is:
- [ ] the first return/report
- [ ] the final return/report
- [ ] an amended return/report
- [ ] a short plan year return/report (less than 12 months)

C If the plan is a collectively-bargained plan, check here. . . . . ▸ [X]

D Check box if filing under:
- [X] Form 5558
- [ ] automatic extension
- [ ] the DFVC program
- [ ] special extension (enter description)

Part II Basic Plan Information—enter all requested information

1a Name of plan CARPENTERS' PENSION TRUST FUND - DETROIT AND VICINITY	**1b** Three-digit plan number (PN) ▸ 001 **1c** Effective date of plan 05/01/1957
2a Plan sponsor's name (employer, if for a single-employer plan) Mailing address (include room, apt., suite no. and street, or P.O. Box) City or town, state or province, country, and ZIP or foreign postal code (if foreign, see instructions) BOARD OF TRUSTEES OF CARPENTERS' PENSION TRUST FUNDDETROIT&VICINITY JOAN JANKS P.O. BOX 4540 TROY, MI 48099-4540	**2b** Employer Identification Number (EIN) 38-6242188 **2c** Plan Sponsor's telephone number 248-813-9800 **2d** Business code (see instructions) 238300

Caution: A penalty for the late or incomplete filing of this return/report will be assessed unless reasonable cause is established.

Under penalties of perjury and other penalties set forth in the instructions, I declare that I have examined this return/report, including accompanying schedules, statements and attachments, as well as the electronic version of this return/report, and to the best of my knowledge and belief, it is true, correct, and complete.

SIGN HERE	Filed with authorized/valid electronic signature.	02/07/2020	TOM LUTZ, CHAIRMAN
	Signature of plan administrator	Date	Enter name of individual signing as plan administrator
SIGN HERE	Filed with authorized/valid electronic signature.	02/07/2020	ROBERT HALIK, SECRETARY
	Signature of employer/plan sponsor	Date	Enter name of individual signing as employer or plan sponsor
SIGN HERE			
	Signature of DFE	Date	Enter name of individual signing as DFE

For Paperwork Reduction Act Notice, see the Instructions for Form 5500.

3a Plan administrator's name and address [X] Same as Plan Sponsor	**3b** Administrator's EIN	
	3c Administrator's telephone number	
4 If the name and/or EIN of the plan sponsor or the plan name has changed since the last return/report filed for this plan, enter the plan sponsor's name, EIN, the plan name and the plan number from the last return/report:	**4b** EIN	
a Sponsor's name **c** Plan Name	**4d** PN	
5 Total number of participants at the beginning of the plan year	**5**	4899
6 Number of participants as of the end of the plan year unless otherwise stated (welfare plans complete only lines **6a(1)**, **6a(2)**, **6b**, **6c**, and **6d**).		
a(1) Total number of active participants at the beginning of the plan year	**6a(1)**	4899
a(2) Total number of active participants at the end of the plan year	**6a(2)**	5021
b Retired or separated participants receiving benefits	**6b**	5440
c Other retired or separated participants entitled to future benefits	**6c**	6436
d Subtotal. Add lines **6a(2)**, **6b**, and **6c**	**6d**	16897
e Deceased participants whose beneficiaries are receiving or are entitled to receive benefits.	**6e**	3355
f Total. Add lines **6d** and **6e**	**6f**	20252
g Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item)	**6g**	
h Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested	**6h**	
7 Enter the total number of employers obligated to contribute to the plan (only multiemployer plans complete this item)	**7**	460

8a If the plan provides pension benefits, enter the applicable pension feature codes from the List of Plan Characteristics Codes in the instructions:

1A

b If the plan provides welfare benefits, enter the applicable welfare feature codes from the List of Plan Characteristics Codes in the instructions:

9a Plan funding arrangement (check all that apply)	**9b** Plan benefit arrangement (check all that apply)
(1) [ ] Insurance	(1) [ ] Insurance
(2) [ ] Code section 412(e)(3) insurance contracts	(2) [ ] Code section 412(e)(3) insurance contracts
(3) [X] Trust	(3) [X] Trust
(4) [ ] General assets of the sponsor	(4) [ ] General assets of the sponsor

10 Check all applicable boxes in 10a and 10b to indicate which schedules are attached, and, where indicated, enter the number attached. (See instructions)

a Pension Schedules

(1) [X] **R** (Retirement Plan Information)

(2) [X] **MB** (Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information) - signed by the plan actuary

(3) [ ] **SB** (Single-Employer Defined Benefit Plan Actuarial Information) - signed by the plan actuary

b General Schedules

(1) [X] **H** (Financial Information)

(2) [ ] **I** (Financial Information – Small Plan)

(3) [ ] ___ **A** (Insurance Information)

(4) [X] **C** (Service Provider Information)

(5) [X] **D** (DFE/Participating Plan Information)

(6) [ ] **G** (Financial Transaction Schedules)

SCHEDULE R (Form 5500)	Retirement Plan Information	OMB No. 1210-0110
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	This schedule is required to be filed under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6058(a) of the Internal Revenue Code (the Code). ▶ **File as an attachment to Form 5500.**	**2018** **This Form is Open to Public Inspection.**

For calendar plan year 2018 or fiscal plan year beginning 05/01/2018 and ending 04/30/2019

A Name of plan CARPENTERS' PENSION TRUST FUND - DETROIT AND VICINITY	**B** Three-digit plan number (PN) ▶ 001
C Plan sponsor's name as shown on line 2a of Form 5500 BOARD OF TRUSTEES OF CARPENTERS' PENSION TRUST FUNDDETROIT&VICINITY	**D** Employer Identification Number (EIN) 38-6242188

Part I Distributions

All references to distributions relate only to payments of benefits during the plan year.

1 Total value of distributions paid in property other than in cash or the forms of property specified in the instructions .... | 1 |

2 Enter the EIN(s) of payor(s) who paid benefits on behalf of the plan to participants or beneficiaries during the year (if more than two, enter EINs of the two payors who paid the greatest dollar amounts of benefits):

EIN(s): ____________ ____________

Profit-sharing plans, ESOPs, and stock bonus plans, skip line 3.

3 Number of participants (living or deceased) whose benefits were distributed in a single sum, during the plan year .... | 3 | 0

Part II Funding Information (If the plan is not subject to the minimum funding requirements of section 412 of the Internal Revenue Code or ERISA section 302, skip this Part.)

4 Is the plan administrator making an election under Code section 412(d)(2) or ERISA section 302(d)(2)? .... ☐ Yes ☒ No ☐ N/A

If the plan is a defined benefit plan, go to line 8.

5 If a waiver of the minimum funding standard for a prior year is being amortized in this plan year, see instructions and enter the date of the ruling letter granting the waiver. **Date:** Month ______ Day ______ Year ______

If you completed line 5, complete lines 3, 9, and 10 of Schedule MB and do not complete the remainder of this schedule.

6 a Enter the minimum required contribution for this plan year (include any prior year accumulated funding deficiency not waived) .... | 6a |

b Enter the amount contributed by the employer to the plan for this plan year .... | 6b |

c Subtract the amount in line 6b from the amount in line 6a. Enter the result (enter a minus sign to the left of a negative amount) .... | 6c |

If you completed line 6c, skip lines 8 and 9.

7 Will the minimum funding amount reported on line 6c be met by the funding deadline? .... ☐ Yes ☐ No ☐ N/A

8 If a change in actuarial cost method was made for this plan year pursuant to a revenue procedure or other authority providing automatic approval for the change or a class ruling letter, does the plan sponsor or plan administrator agree with the change? .... ☐ Yes ☐ No ☒ N/A

Part III Amendments

9 If this is a defined benefit pension plan, were any amendments adopted during this plan year that increased or decreased the value of benefits? If yes, check the appropriate box. If no, check the "No" box. .... ☐ Increase ☐ Decrease ☐ Both ☒ No

Part IV ESOPs (see instructions). If this is not a plan described under section 409(a) or 4975(e)(7) of the Internal Revenue Code, skip this Part.

10 Were unallocated employer securities or proceeds from the sale of unallocated securities used to repay any exempt loan? .... ☐ Yes ☐ No

11 a Does the ESOP hold any preferred stock? .... ☐ Yes ☐ No

b If the ESOP has an outstanding exempt loan with the employer as lender, is such loan part of a "back-to-back" loan? (See instructions for definition of "back-to-back" loan.) .... ☐ Yes ☐ No

12 Does the ESOP hold any stock that is not readily tradable on an established securities market? .... ☐ Yes ☐ No

Part V Additional Information for Multiemployer Defined Benefit Pension Plans

13 Enter the following information for each employer that contributed more than 5% of total contributions to the plan during the plan year (measured in dollars). See instructions. *Complete as many entries as needed to report all applicable employers.*

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month ______ Day ______ Year ______

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) ______
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify):

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month ______ Day ______ Year ______

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) ______
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): ______

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month ______ Day ______ Year ______

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) ______
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): ______

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month ______ Day ______ Year ______

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) ______
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): ______

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month ______ Day ______ Year ______

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) ______
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): ______

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month ______ Day ______ Year ______

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) ______
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): ______

14 Enter the number of participants on whose behalf no contributions were made by an employer as an employer of the participant for:

a The current year	**14a**	
b The plan year immediately preceding the current plan year	**14b**	
c The second preceding plan year	**14c**	

15 Enter the ratio of the number of participants under the plan on whose behalf no employer had an obligation to make an employer contribution during the current plan year to:

a The corresponding number for the plan year immediately preceding the current plan year	**15a**	
b The corresponding number for the second preceding plan year	**15b**	

16 Information with respect to any employers who withdrew from the plan during the preceding plan year:

a Enter the number of employers who withdrew during the preceding plan year	**16a**	
b If line 16a is greater than 0, enter the aggregate amount of withdrawal liability assessed or estimated to be assessed against such withdrawn employers	**16b**	

17 If assets and liabilities from another plan have been transferred to or merged with this plan during the plan year, check box and see instructions regarding supplemental information to be included as an attachment. ☐

Part VI Additional Information for Single-Employer and Multiemployer Defined Benefit Pension Plans

18 If any liabilities to participants or their beneficiaries under the plan as of the end of the plan year consist (in whole or in part) of liabilities to such participants and beneficiaries under two or more pension plans as of immediately before such plan year, check box and see instructions regarding supplemental information to be included as an attachment ☐

19 If the total number of participants is 1,000 or more, complete lines (a) through (c)

a Enter the percentage of plan assets held as:

Stock: 31.9 % Investment-Grade Debt: 9.8 % High-Yield Debt: 1.1 % Real Estate: 20.8 % Other: 36.4 %

b Provide the average duration of the combined investment-grade and high-yield debt:

☐ 0-3 years ☐ 3-6 years ☒ 6-9 years ☐ 9-12 years ☐ 12-15 years ☐ 15-18 years ☐ 18-21 years ☐ 21 years or more

c What duration measure was used to calculate line 19(b)?

☐ Effective duration ☐ Macaulay duration ☒ Modified duration ☐ Other (specify):

SCHEDULE MB (Form 5500)	Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information	OMB No. 1210-0110
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6059 of the Internal Revenue Code (the Code). ▶ File as an attachment to Form 5500 or 5500-SF.	**2018** This Form is Open to Public Inspection

For calendar plan year 2018 or fiscal plan year beginning 05/01/2018 and ending 04/30/2019

▶ **Round off amounts to nearest dollar.**

▶ **Caution:** A penalty of $1,000 will be assessed for late filing of this report unless reasonable cause is established.

A Name of plan
Carpenters Pension Trust Fund - Detroit & Vicinity

B Three-digit plan number (PN) ▶ 001

C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF
Trustees of Carpenters Pension
Trust Fund - Detroit & Vicinity

D Employer Identification Number (EIN)
38-6242188

E Type of plan: (1) [X] Multiemployer Defined Benefit (2) [ ] Money Purchase (see instructions)

1a Enter the valuation date: Month 5 Day 1 Year 2018

b Assets		
(1) Current value of assets	1b(1)	761,729,009
(2) Actuarial value of assets for funding standard account	1b(2)	771,736,789
c (1) Accrued liability for plan using immediate gain methods	1c(1)	2,217,887,651
(2) Information for plans using spread gain methods:		
(a) Unfunded liability for methods with bases	1c(2)(a)	
(b) Accrued liability under entry age normal method	1c(2)(b)	
(c) Normal cost under entry age normal method	1c(2)(c)	
(3) Accrued liability under unit credit cost method	1c(3)	2,217,887,651
d Information on current liabilities of the plan:		
(1) Amount excluded from current liability attributable to pre-participation service (see instructions)	1d(1)	
(2) "RPA '94" information:		
(a) Current liability	1d(2)(a)	3,977,510,040
(b) Expected increase in current liability due to benefits accruing during the plan year	1d(2)(b)	37,383,894
(c) Expected release from "RPA '94" current liability for the plan year	1d(2)(c)	154,307,287
(3) Expected plan disbursements for the plan year	1d(3)	156,614,181

Statement by Enrolled Actuary

To the best of my knowledge, the information supplied in this schedule and accompanying schedules, statements and attachments, if any, is complete and accurate. Each prescribed assumption was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.

SIGN HERE Angela L. Jeffries 1-29-2020

Signature of actuary — Date

Angela L. Jeffries, EA, MAAA — 17-08511

Type or print name of actuary — Most recent enrollment number

United Actuarial Services, Inc. — (317)580-8668

Firm name — Telephone number (including area code)

11590 N. Meridian Street, Suite 610
Carmel IN 46032-4529

Address of the firm

If the actuary has not fully reflected any regulation or ruling promulgated under the statute in completing this schedule, check the box and see instructions [ ]

2 Operational information as of beginning of this plan year:

a Current value of assets (see instructions) 2a 761,729,009

b "RPA '94" current liability/participant count breakdown:

	(1) Number of participants	(2) Current liability
(1) For retired participants and beneficiaries receiving payment	7,395	2,319,183,732
(2) For terminated vested participants	6,438	633,934,879
(3) For active participants:		
(a) Non-vested benefits		21,647,891
(b) Vested benefits		1,002,743,538
(c) Total active	5,803	1,024,391,429
(4) Total	19,636	3,977,510,040

c If the percentage resulting from dividing line 2a by line 2b(4), column (2), is less than 70%, enter such percentage ..... 2c 19.15 %

3 Contributions made to the plan for the plan year by employer(s) and employees:

(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees	(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	c) Amount paid by employees
04/30/2019	116,595,346				
			Totals ► 3(b)	116,595,346	3(c) 0

4 Information on plan status:

a Funded percentage for monitoring plan's status (line 1b(2) divided by line 1c(3)) ..... 4a 34.8 %

b Enter code to indicate plan's status (see instructions for attachment of supporting evidence of plan's status). If code is "N," go to line 5 ..... 4b D

c Is the plan making the scheduled progress under any applicable funding improvement or rehabilitation plan? ..... [X] Yes [ ] No

d If the plan is in critical status or critical and declining status, were any benefits reduced (see instructions)? ..... [ ] Yes [X] No

e If line d is "Yes," enter the reduction in liability resulting from the reduction in benefits (see instructions), measured as of the valuation date 4e

f If the rehabilitation plan projects emergence from critical status or critical and declining status, enter the plan year in which it is projected to emerge.
If the rehabilitation plan is based on forestalling possible insolvency, enter the plan year in which insolvency is expected and check here ..... [X] 4f 2034

5 Actuarial cost method used as the basis for this plan year's funding standard account computations (check all that apply):

a [ ] Attained age normal b [ ] Entry age normal c [X] Accrued benefit (unit credit) d [ ] Aggregate

e [ ] Frozen initial liability f [ ] Individual level premium g [ ] Individual aggregate h [ ] Shortfall

i [ ] Other (specify):

j If box h is checked, enter period of use of shortfall method 5j

k Has a change been made in funding method for this plan year? ..... [ ] Yes [X] No

l If line k is "Yes," was the change made pursuant to Revenue Procedure 2000-40 or other automatic approval? ..... [ ] Yes [ ] No

m If line k is "Yes," and line l is "No," enter the date (MM-DD-YYYY) of the ruling letter (individual or class) approving the change in funding method 5m

6 Checklist of certain actuarial assumptions:

		Pre-retirement		Post-retirement	
a Interest rate for "RPA '94" current liability	6a			2.99 %	
b Rates specified in insurance or annuity contracts		☐ Yes ☐ No ☒ N/A		☐ Yes ☐ No ☒ N/A	
c Mortality table code for valuation purposes:					
(1) Males	6c(1)	A		A	
(2) Females	6c(2)	A		A	
d Valuation liability interest rate	6d	7.50 %		7.50 %	
e Expense loading	6e	21.1 %	☐ N/A	%	☒ N/A
f Salary scale	6f	%	☒ N/A		
g Estimated investment return on actuarial value of assets for year ending on the valuation date	6g			2.6 %	
h Estimated investment return on current value of assets for year ending on the valuation date	6h			7.9 %	

7 New amortization bases established in the current plan year:

(1) Type of base	(2) Initial balance	(3) Amortization Charge/Credit
1	49,896,267	5,258,242
4	-19,745,105	-2,080,808

8 Miscellaneous information:

a If a waiver of a funding deficiency has been approved for this plan year, enter the date (MM-DD-YYYY) of the ruling letter granting the approval	8a	
b(1) Is the plan required to provide a projection of expected benefit payments? (See the instructions.) If "Yes," attach a schedule.		☒ Yes ☐ No
b(2) Is the plan required to provide a Schedule of Active Participant Data? (See the instructions.) If "Yes," attach a schedule.		☒ Yes ☐ No
c Are any of the plan's amortization bases operating under an extension of time under section 412(e) (as in effect prior to 2008) or section 431(d) of the Code?		☒ Yes ☐ No
d If line c is "Yes," provide the following additional information:		
(1) Was an extension granted automatic approval under section 431(d)(1) of the Code?		☒ Yes ☐ No
(2) If line 8d(1) is "Yes," enter the number of years by which the amortization period was extended	8d(2)	5
(3) Was an extension approved by the Internal Revenue Service under section 412(e) (as in effect prior to 2008) or 431(d)(2) of the Code?		☐ Yes ☒ No
(4) If line 8d(3) is "Yes," enter number of years by which the amortization period was extended (not including the number of years in line (2))	8d(4)	
(5) If line 8d(3) is "Yes," enter the date of the ruling letter approving the extension	8d(5)	
(6) If line 8d(3) is "Yes," is the amortization base eligible for amortization using interest rates applicable under section 6621(b) of the Code for years beginning after 2007?		☐ Yes ☐ No
e If box 5h is checked or line 8c is "Yes," enter the difference between the minimum required contribution for the year and the minimum that would have been required without using the shortfall method or extending the amortization base(s)	8e	294,884,548

9 Funding standard account statement for this plan year:

Charges to funding standard account:

		Outstanding balance	
a Prior year funding deficiency, if any	9a		327,315,629
b Employer's normal cost for plan year as of valuation date	9b		18,231,462
c Amortization charges as of valuation date:			
(1) All bases except funding waivers and certain bases for which the amortization period has been extended	9c(1)	1,654,442,353	218,273,664
(2) Funding waivers	9c(2)	0	0
(3) Certain bases for which the amortization period has been extended	9c(3)	0	0
d Interest as applicable on lines 9a, 9b, and 9c	9d		42,286,556
e Total charges. Add lines 9a through 9d	9e		606,107,311

Credits to funding standard account:				
f Prior year credit balance, if any			9f	0
g Employer contributions. Total from column (b) of line 3			9g	116,595,346
		Outstanding balance		
h Amortization credits as of valuation date	9h	535,607,120		70,679,954
i Interest as applicable to end of plan year on lines 9f, 9g, and 9h			9i	9,673,325
j Full funding limitation (FFL) and credits:				
(1) ERISA FFL (accrued liability FFL)	9j(1)	1,584,974,783		
(2) "RPA '94" override (90% current liability FFL)	9j(2)	2,915,405,494		
(3) FFL credit			9j(3)	0
k (1) Waived funding deficiency			9k(1)	0
(2) Other credits			9k(2)	0
l Total credits. Add lines 9f through 9i, 9j(3), 9k(1), and 9k(2)			9l	196,948,625
m Credit balance: If line 9l is greater than line 9e, enter the difference			9m	
n Funding deficiency: If line 9e is greater than line 9l, enter the difference			9n	409,158,686

9 o Current year's accumulated reconciliation account:		
(1) Due to waived funding deficiency accumulated prior to the 2018 plan year	9o(1)	0
(2) Due to amortization bases extended and amortized using the interest rate under section 6621(b) of the Code:		
(a) Reconciliation outstanding balance as of valuation date	9o(2)(a)	0
(b) Reconciliation amount (line 9c(3) balance minus line 9o(2)(a))	9o(2)(b)	0
(3) Total as of valuation date	9o(3)	0
10 Contribution necessary to avoid an accumulated funding deficiency. (See instructions.)	10	409,158,686
11 Has a change been made in the actuarial assumptions for the current plan year? If "Yes," see instructions		☒ Yes ☐ No

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY
EIN: 38-6242188/PN: 001
ATTACHMENT TO 2018 SCHEDULE MB: LINE 3
STATEMENT BY ENROLLED ACTUARY

Schedule MB, line 3 – Withdrawal Liability Amounts

The employer contributions shown in line 3 of the Schedule MB were contributed or accrued throughout the plan year for work performed during the plan year with the exception of the below amounts which were owed for withdrawal liability.

Date	*Withdrawal Liability Amounts*
05/31/2018	0
06/30/2018	37,094
07/31/2018	20,000
08/31/2018	88,195
09/30/2018	8,000
10/31/2018	4,809
11/30/2018	2,918,805
12/31/2018	5,309
01/31/2019	5,000
02/29/2019	3,000
03/31/2019	5,000
04/30/2019	5,309

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY
EIN: 38-6242188/PN: 001
ATTACHMENT TO 2018 SCHEDULE MB: LINE 4B
STATEMENT BY ENROLLED ACTUARY

Schedule MB, line 4b - Illustration Supporting Actuarial Certification of Status

The plan was certified in Critical and Declining status as of May 1, 2018. Refer to the attached PPA certification. This result is based on a funded ratio of 34.5% and an existing funding deficiency (recognizing amortization extensions), which is projected to remain negative (recognizing amortization extensions) at the end of the 2018-19 plan year as shown in the table below:

As of	*Credit Balance/ (Funding Deficiency)*
4/30/2018	(328,004,000)
4/30/2019	(400,878,000)

CPTF000753

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY

EIN: 38-6242188/PN: 001

ATTACHMENT TO 2018 SCHEDULE MB: LINE 4B CASH FLOW PROJECTIONS

The plan is also projected to have an insolvency for the plan year ending April 30, 2036 as shown in the cash flow tables below:

PYB	5/1/2017	5/1/2018	5/1/2019	5/1/2020	5/1/2021
PYE	4/30/2018	4/30/2019	4/30/2020	4/30/2021	4/30/2022
Market Value at beg. of yr.	734,239,795	759,201,033	779,826,487	794,175,332	801,252,299
Contributions	122,483,957	131,733,986	127,859,457	123,984,928	108,486,812
Administrative expenses	(4,636,669)	(4,300,000)	(4,300,000)	(4,300,000)	(4,300,000)
Benefit payments	(148,360,507)	(155,978,946)	(159,498,307)	(163,580,120)	(168,123,085)
Investment earnings	55,474,457	49,170,413	50,287,695	50,972,159	50,777,884
Market Value at end of yr.	759,201,033	779,826,487	794,175,332	801,252,299	788,093,909

PYB	5/1/2022	5/1/2023	5/1/2024	5/1/2025	5/1/2026
PYE	4/30/2023	4/30/2024	4/30/2025	4/30/2026	4/30/2027
Market Value at beg. of yr.	788,093,909	768,930,375	743,579,117	711,909,936	673,609,375
Contributions	108,486,812	108,486,812	108,486,812	108,486,812	108,486,812
Administrative expenses	(4,300,000)	(4,300,000)	(4,300,000)	(4,300,000)	(4,300,000)
Benefit payments	(173,095,681)	(177,861,344)	(182,357,703)	(186,753,846)	(190,929,817)
Investment earnings	49,745,334	48,323,274	46,501,711	44,266,473	41,600,828
Market Value at end of yr.	768,930,375	743,579,117	711,909,936	673,609,375	628,467,198

PYB	5/1/2027	5/1/2028	5/1/2029	5/1/2030	5/1/2031
PYE	4/30/2028	4/30/2029	4/30/2030	4/30/2031	4/30/2032
Market Value at beg. of yr.	628,467,198	576,942,338	523,696,038	463,724,567	397,385,406
Contributions	108,486,812	108,486,812	108,486,812	108,486,812	108,486,812
Administrative expenses	(4,300,000)	(4,300,000)	(4,300,000)	(4,300,000)	(4,300,000)
Benefit payments	(194,224,396)	(197,220,839)	(199,853,802)	(201,656,047)	(202,790,224)
Investment earnings	38,512,724	39,787,728	35,695,519	31,130,075	26,112,106
Market Value at end of yr.	576,942,338	523,696,038	463,724,567	397,385,406	324,894,100

PYB	5/1/2032	5/1/2033	5/1/2034	5/1/2035	
PYE	4/30/2033	4/30/2034	4/30/2035	4/30/2036	
Market Value at beg. of yr.	324,894,100	246,513,499	162,040,634	71,795,220	
Contributions	108,486,812	108,486,812	108,486,812	108,486,812	
Administrative expenses	(4,300,000)	(4,300,000)	(4,300,000)	(4,300,000)	
Benefit payments	(203,226,316)	(203,432,311)	(202,889,743)	(201,595,081)	
Investment earnings	20,658,904	14,772,635	8,457,516	1,737,660	
Market Value at end of yr.	246,513,499	162,040,634	71,795,220	(23,875,390)	

United Actuarial
Services, Inc.
Actuaries and Consultants

July 27, 2018

Board of Trustees
Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan
700 Tower Drive, Suite 300
Troy, MI 48098-2808

Re: 2018 Actuarial Certification Under the Pension Protection Act

Dear Trustees:

The following information is intended to comply with the annual certification requirements of IRC section 432, with respect to the funded status of the Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan.

Identifying Information

Plan Name: Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan
EIN/Plan #: 38-6242188/001
Plan year of Certification: year beginning May 1, 2018
Plan Sponsor: Board of Trustees of Carpenters Pension Trust Fund – Detroit and Vicinity Pension Plan
Sponsor Address: 700 Tower Drive, Suite 300, Troy, MI 48098-2808
Sponsor Telephone: 1-800-572-2525
Enrolled Actuary Name: Angela L. Jeffries
Enrollment Number: 17-08511
Actuary Address: 11590 N. Meridian St., Suite 610, Carmel, IN 46032
Actuary Telephone: (317) 580-8668

Certification of Plan Status

I certify that the above-named Plan is in the following status as of May 1, 2018 (all that apply are checked):

Safe--Neither Endangered nor Critical Status	
Safe--Neither Endangered nor Critical Status Due to Special Rule	
Endangered Status	
Seriously Endangered Status	
Projected to be in Critical Status within 5 years	
Critical Status	
Critical and Declining Status	X

These certifications are based on the following results:

• Projected funded ratio as of May 1, 2018:	34.5%
• Previously emerged from critical status using IRC Section 432(e)(4)(B)(ii)(I) special emergence rule?:	No
• First projected deficiency (with extension):	Existing deficiency, FSA projected to remain negative as of April 30, 2019
• At least 8 years of benefit payments in plan assets?:	Yes
• Plan year of projected insolvency:	2035
• Ratio of inactive to active participants:	2.65 inactive/active

Certification of Scheduled Progress

I certify that the above-named Plan **has** made scheduled progress as of May 1, 2018 as outlined in the 2014 updated rehabilitation plan. The Plan is not projected to emerge from Critical status by the end of the rehabilitation plan period as specified in the updated rehabilitation plan. This rehabilitation plan, however, includes the use of the "exhaustion of all reasonable measures" clause of IRC 432(e)(3)(A)(ii). Therefore, we interpret scheduled progress for this Plan to mean continued use of all reasonable measures to emerge at the earliest date possible or to forestall insolvency.

Basis for Result

The certifications utilize the assumptions, methods, plan provisions and demographic data as disclosed in the May 1, 2017 actuarial valuation report with the following exceptions:

- Based on the April 30, 2018 unaudited financial statements provided by the plan administrator, the asset return for the 2017-18 plan year is assumed to be 7.72%. We also updated the contributions, benefit payments, and expenses for the 2017-18 plan year based on these financial statements.

- For the period May 1, 2018 through April 30, 2028, plan assets were assumed to return 6.60% per year, with 7.50% per year assumed thereafter.

- No adjustments were made to the contribution rate assumption.

- Based on information provided by the Trustees regarding projection of future industry activity, the following hours were assumed: 8,500,000 for the plan year beginning in 2018, 8,250,000 for the plan year beginning in 2019, 8,000,000 for the plan year beginning in 2020, and 7,000,000 for each plan year thereafter. For the 2017-2018 plan year, our projections used actual hours of 9,285,188.

I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. These certifications are intended to be in good faith compliance with the necessary disclosures for certification and represent my best estimate of the Plan's funded position. We are available to answer questions regarding these certifications.

Sincerely,

Angela Jeffries

Angela L. Jeffries, EA, MAAA
Consulting Actuary
Enrollment Number: 17-08511

Date of Signature: 7/27/2018

cc: Secretary of the Treasury
Mr. Andrew Smith, UAS
Ms. Joan Janks, Plan Manager
Ms. Linda Olsson, Plan Associate
Mr. John Tesija, Fund Counsel
Mr. Christopher Scott, Auditor
Ms. Carly Lewandowski, Auditor

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Carpenters Pension Trust Fund – Detroit and Vicinity
EIN: 38-6242188/PN: 001
Attachment to 2018 Schedule MB: Line 4c
Statement by Enrolled Actuary

Schedule MB, line 4c - Documentation Regarding Progress Under Funding Improvement or Rehabilitation Plan

The Plan has made the scheduled progress as of May 1, 2019 as outlined in the 2014 rehabilitation plan. This is based on the data, plan provisions, assumptions and methods as described in the attached certification dated July 29, 2019. Projections indicate that the Plan is not projected to emerge from Critical and Declining at the end of the rehabilitation plan period. This rehabilitation plan, however, includes the use of the "exhaustion of all reasonable measures" clause of IRC 432(e)(3)(A)(ii). Therefore, we interpret scheduled progress for this Plan to mean continued use of all reasonable measures to forestall insolvency. Due to competitive pressures, the trustees do not believe any further contribution rate increase or benefit changes could be supported at this time without having a net negative impact on the Fund. The trustees continue to monitor this situation annually.

United Actuarial Services, Inc.
Actuaries and Consultants

July 29, 2019

Board of Trustees
Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan
700 Tower Drive, Suite 300
Troy, MI 48098-2808

Re: 2019 Actuarial Certification Under the Pension Protection Act

Dear Trustees:

The following information is intended to comply with the annual certification requirements of IRC section 432, with respect to the funded status of the Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan.

Identifying Information

Plan Name: Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan
EIN/Plan #: 38-6242188/001
Plan year of Certification: year beginning May 1, 2019
Plan Sponsor: Board of Trustees of Carpenters Pension Trust Fund – Detroit and Vicinity Pension Plan
Sponsor Address: 700 Tower Drive, Suite 300, Troy, MI 48098-2808
Sponsor Telephone: 1-800-572-2525
Enrolled Actuary Name: Angela L. Jeffries
Enrollment Number: 17-08511
Actuary Address: 11590 N. Meridian St., Suite 610, Carmel, IN 46032
Actuary Telephone: (317) 580-8668

Certification of Plan Status

I certify that the above-named Plan is in the following status as of May 1, 2019 (all that apply are checked):

Safe--Neither Endangered nor Critical Status	
Safe--Neither Endangered nor Critical Status Due to Special Rule	
Endangered Status	
Seriously Endangered Status	
Projected to be in Critical Status within 5 years	
Critical Status	
Critical and Declining Status	X

This certification is based on the following results:

• Projected funded ratio as of May 1, 2019:	34.5%
• Previously emerged from critical status using IRC Section 432(e)(4)(B)(ii)(I) special emergence rule?:	No
• First projected deficiency (with extension):	Existing deficiency, FSA projected to remain negative as of April 30, 2019
• At least 8 years of benefit payments in plan assets?:	Yes
• Plan year of projected insolvency:	2034-35 plan year
• Ratio of inactive to active participants:	2.38

Certification of Scheduled Progress

I certify that the above-named Plan **has** made scheduled progress as of May 1, 2019 as outlined in the 2014 updated rehabilitation plan. The Plan is not projected to emerge from Critical status by the end of the rehabilitation plan period as specified in the updated rehabilitation plan. This rehabilitation plan, however, includes the use of the "exhaustion of all reasonable measures" clause of IRC 432(e)(3)(A)(ii). Therefore, we interpret scheduled progress for this Plan to mean continued use of all reasonable measures to emerge at the earliest date possible or to forestall insolvency.

Basis for Result

The certifications utilize the assumptions, methods, plan provisions and demographic data as disclosed in the May 1, 2018 actuarial valuation report with the following exceptions:

- Based on the April 30, 2019 unaudited financial statements provided by the plan administrator, the asset return for the 2018-19 plan year is assumed to be 6.26%. We also updated the contributions, benefit payments, and expenses for the 2018-19 plan year based on these financial statements.

- For the period May 1, 2019 through April 30, 2028, plan assets were assumed to return 6.40% per year, with 7.50% per year assumed thereafter.

- No adjustments were made to the contribution rate assumption.

- Based on information provided by the Trustees regarding projection of future industry activity, the following hours were assumed: 8,200,000 for the plan year beginning in 2019; 8,000,000 for the plan year beginning in 2020; 7,800,000 for the plan year beginning in 2021, and 7,000,000 for each plan year thereafter. For the 2018-2019 plan year, our projections used actual hours of 7,953,779.

I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. These certifications are intended to be in good faith compliance with the necessary disclosures for certification and represent my best estimate of the Plan's funded position. We are available to answer questions regarding these certifications.

Sincerely,

Angela Jeffries

Angela L. Jeffries, EA, MAAA
Consulting Actuary
Enrollment Number: 17-08511

Date of Signature: 07-29-2019

cc: Secretary of the Treasury
Mr. Andrew Smith, UAS
Ms. Joan Janks, Plan Manager
Ms. Linda Olsson, Plan Associate
Mr. John Tesija, Fund Counsel
Mr. Christopher Scott, Auditor

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CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY
EIN: 38-6242188/PN: 001
ATTACHMENT TO 2018 SCHEDULE MB: LINE 4F
STATEMENT BY ENROLLED ACTUARY

Schedule MB, line 4f – Cash Flow Projections

The year of insolvency was calculated on the same basis as the 2019 PPA certification scheduled progress. Therefore, the date is different than in the line 4b display on the previous page, which was based on the 2018 PPA certification.

The cash flow projections in the following tables are based on the below assumptions:

Assumed return on fund assets	6.26% for the plan year ending 4/30/2019 6.40% for the next 9 years (5/1/2019-4/30/2028) 7.50% thereafter
Future total hours worked	7,953,779 for the plan year ending 4/30/2019 8,200,000 for the plan year ending 4/30/2020 8,000,000 for the plan year ending 4/30/2021 7,800,000 for the plan year ending 4/30/2022 7,000,000 thereafter
Contribution rate increases	None

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY

EIN: 38-6242188/PN: 001

ATTACHMENT TO 2018 SCHEDULE MB: LINE 4F CASH FLOW PROJECTIONS

PYB	5/1/2018	5/1/2019	5/1/2020	5/1/2021	5/1/2022
PYE	4/30/2019	4/30/2020	4/30/2021	4/30/2022	4/30/2023
Market Value at beg. of yr.	761,729,009	766,375,469	770,722,486	768,714,409	759,293,504
Contributions	114,263,735	120,791,093	117,844,968	114,898,844	103,114,347
Administrative expenses	(4,950,677)	(4,000,000)	(4,000,000)	(4,000,000)	(4,000,000)
Benefit payments	(151,030,775)	(160,110,511)	(163,592,005)	(167,704,323)	(172,117,418)
Investment earnings	46,364,177	47,666,435	47,738,960	47,384,573	46,263,312
Market Value at end of yr.	766,375,469	770,722,486	768,714,409	759,293,504	732,553,746

PYB	5/1/2023	5/1/2024	5/1/2025	5/1/2026	5/1/2027
PYE	4/30/2024	4/30/2025	4/30/2026	4/30/2027	4/30/2028
Market Value at beg. of yr.	732,553,746	699,609,974	660,204,672	614,082,852	561,045,125
Contributions	103,114,347	103,114,347	103,114,347	103,114,347	103,114,347
Administrative expenses	(4,000,000)	(4,000,000)	(4,000,000)	(4,000,000)	(4,000,000)
Benefit payments	(176,470,780)	(180,688,928)	(184,753,441)	(188,594,635)	(191,598,542)
Investment earnings	44,412,660	42,169,278	39,517,274	36,442,560	32,952,020
Market Value at end of yr.	699,609,974	660,204,672	614,082,852	561,045,125	501,512,951

PYB	5/1/2028	5/1/2029	5/1/2030	5/1/2031	5/1/2032
PYE	4/30/2029	4/30/2030	4/30/2031	4/30/2032	4/30/2033
Market Value at beg. of yr.	501,512,951	440,247,800	371,683,126	296,034,282	213,301,507
Contributions	103,114,347	103,114,347	103,114,347	103,114,347	103,114,347
Administrative expenses	(4,000,000)	(4,000,000)	(4,000,000)	(4,000,000)	(4,000,000)
Benefit payments	(194,424,269)	(197,031,148)	(198,902,781)	(200,262,076)	(200,854,975)
Investment earnings	34,044,771	29,352,127	24,139,590	18,414,953	12,187,761
Market Value at end of yr.	440,247,800	371,683,126	296,034,282	213,301,507	123,748,640

PYB	5/1/2033	5/1/2034			
PYE	4/30/2034	4/30/2035			
Market Value at beg. of yr.	123,748,640	27,024,999			
Contributions	103,114,347	103,114,347			
Administrative expenses	(4,000,000)	(4,000,000)			
Benefit payments	(201,292,863)	(201,008,163)			
Investment earnings	5,454,875	(1,788,721)			
Market Value at end of yr.	27,024,999	(76,657,538)			

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY
EIN: 38-6242188/PN: 001
ATTACHMENT TO 2018 SCHEDULE MB: LINE 6
STATEMENT BY ENROLLED ACTUARY

Schedule MB, line 6 - Summary of Plan Provisions
Attached is a summary of the plan provisions valued. The plan provisions are the same as those valued in the preceding year.

Schedule MB, line 6 - Statement of Actuarial Assumptions/Methods
Attached is a summary of the actuarial assumptions and methods used to perform the most recent valuation.

PLAN HISTORY

Origins/Purpose

The Carpenters Pension Trust Fund – Detroit and Vicinity Pension Plan was established effective May 1, 1957 as a result of collective bargaining agreements between the Carpenters' District Council of Detroit and Vicinity and various employer associations and other employers working within the jurisdiction of the Carpenters' District Council.

The Pension Plan is managed under the provisions of the Labor Management Relations Act by a Board of Trustees consisting of an equal number of representatives from Labor and from Management.

Effective May 1, 2002, the Interior Systems Local 1045 Resilient Pension Fund Pension Plan was merged with Carpenters Pension Trust Fund – Detroit and Vicinity Pension Plan.

Employer Contributions

The Pension Plan is financed entirely by contributions from the employers as specified in the applicable Collective Bargaining Agreements. Contributions began May 1, 1957 at the rate of 3% of wages. The rate has been increased through the years.

Reciprocity

The Trustees adopted a "Money Follows the Man" Reciprocity Agreement with other signatory funds within the Third District of the United Brotherhood of Carpenters and Joiners of America (AFL-CIO). Also, the Trustees became a party of the International's Reciprocal Agreement for Carpenters Pension Funds, which includes both the Pro-Rata and Money Follows the Man reciprocity types.

SUMMARY OF PLAN PROVISIONS

Plan year	The 12-month period beginning May 1 and ending the following April 30
Vesting/credit year	A participant shall accrue 1 vesting/credit year for each plan year on and after May 1, 1957, during which the participant is credited with 500 or more hours of service. 500 hours of service is equivalent to 435 hours of work.
Break in service	Plan year with less than 500 hours of service (435 hours of work)
Inactive participant	No hours of service during 2 consecutive plan years
Normal retirement benefit	
Eligibility	Age 65 or 5th anniversary of participation, if later
Monthly amount	• 4.30% of employer contributions for work performed prior to May 1, 2004, plus • 3.00% of employer contributions for work performed May 1, 2004 – April 30, 2007, plus • 1.00% of employer contributions for work performed on and after May 1, 2007. Payable for Life.

SUMMARY OF PLAN PROVISIONS (CONT.)

Contribution "discounting"	Contributions that are "discounted" according to the following schedule are not considered in determining benefits. • Contributions for work performed from June 1, 2006 through May 31, 2007 are generally "discounted" by 22% to 23%. • Contributions for work performed from June 1, 2007 through May 31, 2008 are generally "discounted" by 16% to 17%. Some contracts are discounted by 35%. • Contributions for work performed from June 1, 2008 through May 31, 2009 are generally "discounted" by 23% to 23.5%. The Floorlayers contract is discounted by 28%; the Millmen and some other contracts are discounted by 45%. • Contributions for work performed from June 1, 2009 through May 31, 2010 are generally "discounted" by 37% to 37.5%. The Floorlayers contract is discounted by 42%; the Millmen and some other contracts are discounted by 45%. • Contributions for work performed from June 1, 2010 through May, 31, 2011 are generally "discounted" by 45% to 46%. The Floorlayers contract is discounted by 51%; the Millmen and some other contracts are discounted by 50%. • Contributions for work performed from June 1, 2011 through May 31, 2012 are generally "discounted" by 50% to 53%. The Floorlayers contract is discounted by 56%. • Contributions for work performed from June 1, 2012 through May 31, 2013 are generally "discounted" by 55% to 57.75%. The Floorlayers contract is discounted by 60.75%. • Contributions for work performed on and after June 1, 2013 are generally "discounted" by 61%. Effective on and after January 1, 2019, the Liberty Fabricating contract is discounted by 20%.

SUMMARY OF PLAN PROVISIONS (CONT.)

Early retirement benefit

Eligibility	Age 55 and 10 credit years, has met Applicable Index Requirement, worked at least 435 hours in the two years prior to retirement. Applicable Index Requirement is 80 points if participant had at least 76 points as of May 1, 2010; otherwise 85 points.
Monthly amount	Normal reduced by 1/3rd of 1% for each month under age 62 (unless eligible for grandfathered exception – see below). Payable for life.
Eligibility	Age 55 and 10 credit years or age 62 and 3 credit years, has not met Applicable Index Requirement, worked at least 435 hours in the two years prior to retirement.
Monthly amount	Normal reduced by 5/9% for each month under age 62 (unless eligible for grandfathered exception – see below). Payable for life.
Eligibility	Grandfathered exception: Active at retirement, meets the Applicable Index Requirement on or before August 1, 2015
Monthly amount	Early retirement benefit will not be less than normal reduced by 5%. Payable for life.

Vested benefit

Eligibility	Three vesting years, did not work at least 435 hours in the two years prior to retirement
Monthly amount	20% of normal after 3 vesting years increasing 20% per year to 100% at 7 vesting years. Payable for life commencing at age 65, or reduced amount (5/9% reduction for each month by which commencement precedes age 65) commencing at early retirement age, if eligible.

SUMMARY OF PLAN PROVISIONS (CONT.)

Total and permanent disability benefit	
Eligibility	Under age 62, 5 credit years, disability award from the Social Security Administration.
Monthly amount	The greater of 75% of vested accrued normal or $260, multiplied by vested percentage subject to the following cap: • Capped at $525 for credit years 5-9 • Capped at $625 for credit years 10-15 • Capped at $725 for credit years 16-19 • Capped at $1,050 for credit years 20-24 • Capped at $1,350 for 25 or more credit years Payable until eligible for normal, early, recovery or death.
Eligibility	Under age 62, less than 5 credit years, disability award from the Social Security Administration.
Monthly amount	Lump sum payment equal to actuarial equivalent of vested accrued benefit.
Pre-retirement surviving spouse benefit	
Eligibility	Death of married vested participant
Monthly or lump sum amount	50% of participant's joint and 50% survivor. Payable to spouse for life commencing at participant's earliest retirement age.
Optional forms	• Joint and 50% survivor with pop-up • Joint and 75% survivor with pop-up • Joint and 100% survivor with pop-up • Life-ten years certain

ACTUARIAL ASSUMPTIONS

The following assumptions are used throughout this report except as specifically noted herein.

Valuation date	May 1, 2018
Interest rates	
ERISA rate of return used to value liabilities	7.50% per year net of investment expenses.
Current liability	2.99% (in accordance with Section 412(l)(7)(C) of the Internal Revenue Code)
Operational expenses	$ 4,000,000 per year excluding investment expenses. For the present value of expenses for ASC 960, a 2.75% load was applied to the ASC 960 liabilities. This load was calculated by taking 3 years of actual expenses divided by 3 years of actual benefit payments.
Pop-up feature	Retirees receiving a joint and survivor form of benefit have pop-up amounts which are individually estimated. Liabilities for non-retired participants' benefits to be paid after retirement are increased by 0.6%.
Mortality	
Assumed plan mortality	RP-2014 Blue Collar Mortality Tables for employees and healthy annuitants adjusted backward to 2006 with the MP-2014 projection scale and projected forward using the MP-2018 projection scale.
Current liability	Separate annuitant and non-annuitant rates based on the RP-2000 Mortality Tables Report developed for males and females as required by Section 431(c)(6) of the Internal Revenue Code.

ACTUARIAL ASSUMPTIONS (CONT.)

Withdrawal

T-7 Turnover Table from The Actuary's Pension Handbook (less GAM 51 mortality) – specimen rates shown below. Assumed rate during second year of employment is 50%*, 30% for the third year, and 15% for the fourth and fifth years.

Age	Withdrawal Rate
25	.0967
30	.0930
35	.0871
40	.0775
45	.0635
50	.0422
55	.0155
60	.0015

* All newly reported participants are considered to have already worked their first year of employment.

Disability

30% of the 1964 OASDI male table - specimen rates shown below:

Age	Disability Rate
25	.0003
30	.0003
35	.0005
40	.0007
45	.0011
50	.0018
55	.0030
60	.0049

ACTUARIAL ASSUMPTIONS (CONT.)

Retirement

Active lives

According to the following schedule:

Age	Without Index 80 or 85 Requirements	With Index 80 or 85 Requirements
55	.10	.25
56	.10	.25
57	.10	.25
58	.10	.25
59	.15	.25
60	.15	.25
61	.30	.25
62	.30	.40
63	.30	.40
64	.05	.40
65+	1.00	1.00

Resulting in an average expected retirement age of 59.7

Inactive vested lives

Age 59 if at least 10 years of service, and age 62 if less than 10 years of service. It is assumed that inactive vested participants will not qualify for index 80 or 85.

Disabled lives

Disability benefit assumed payable until the earliest of age 62, recovery or death. Then normal retirement benefit commences.

Future Hours Worked

Vested lives

1,600 hours per year, 0 after assumed retirement age

Non-Vested lives

600 hours per year, 0 after assumed retirement age

Future hourly contribution rate

Based on individual's average rate received for the most recent plan year increased to reflect known bargained increases. Additionally, an average "discount" of 61% was assumed.

Age of participants with unrecorded birth dates

Based on average entry age of participants with recorded birth dates and same vesting status.

Marriage assumptions

65% assumed married with the male spouse 2 years older than his wife.

ACTUARIAL ASSUMPTIONS (CONT.)

Optional form assumption

For the non-retired participants, the following table shows the percent assumed to elect an optional form at retirement.

Optional form	Married Participants	Single Participants
Life annuity	15%	85%
Life-ten year certain	5%	15%
Joint & 50% survivor	20%	n/a
Joint & 75% survivor	15%	n/a
Joint & 100% survivor	45%	n/a

Deferred beneficiary lump sum payments

Benefit payments for deferred beneficiaries of deceased participants that are due a lump sum once the plan emerges from critical status are assumed to be paid 20 years after the valuation date.

QDRO benefits

Benefits to alternate payee included with participant's benefit until payment commences.

Section 415 limit assumptions

Dollar limit

$220,000 per year

Assumed form of payment for those limited by Section 415

Qualified joint and 100% survivor annuity.

Benefits not valued

Lump sum disability for participants under age 62 with less than 5 credit years.

RATIONALE FOR SELECTION OF ACTUARIAL ASSUMPTIONS

The non-prescribed actuarial assumptions were selected to provide a reasonable long term estimate of developing experience. The assumptions are reviewed annually, including a comparison to actual experience. The following describes our rationale for the selection of each non-prescribed assumption that has a significant effect on the valuation results.

ERISA rate of return used to value liabilities	Future rates of return were modeled based on the Plan's current investment policy asset allocation and composite, long-term capital market assumptions taken from Horizon Actuarial's 2018 survey of investment consultants. Based on this analysis, we selected a final assumed rate of 7.50%, which we feel is reasonable. This rate may not be appropriate for other purposes such as settlement of liabilities.
Mortality	The RP-2014 Blue Collar Mortality Tables for employees and healthy annuitants adjusted backward to 2006 with the MP-2014 projection scale and projected forward using the MP-2018 projection scale was chosen as the base table for this population. The blue collar table was chosen based on the industry of plan participants.
Retirement	Actual rates of retirement by age were last studied for the period May 1, 2012 and April 30, 2015. The assumed future rates of retirement were selected based on the results of this study. No further adjustments were deemed necessary at this time.
Withdrawal	Actual rates of withdrawal by age were studied for the period May 1, 2013 and April 30, 2018. The assumed future rates of withdrawal were selected based on the results of this study.
Future hours worked	Based on review of recent plan experience adjusted for anticipated future changes in workforce.

ACTUARIAL METHODS

Funding method	
ERISA Funding	Traditional unit credit cost method, effective May 1, 2003.
Funding period	Individual entry age normal with costs spread as a level dollar amount over service.
Population valued	
Actives	Eligible employees with at least one hour during the preceding plan year.
Inactive vested	Vested participants with no hours during the preceding plan year.
Retirees	Participants and beneficiaries in pay status as of the valuation date.
Asset valuation method	
Actuarial value	Smoothed market value effective May 1, 1997. Gains and losses are spread over a 5-year period. The actuarial value is limited to not less than 80% and not more than 120% of the actual market value of assets in any plan year.
Unfunded vested benefits	For the presumptive method, actuarial value, as described above, is used.
Pension Relief Act of 2010	• 10-year smoothing was elected with respect to the loss incurred during the plan year ended in 2009. • The 130% cap on actuarial value of assets was elected for the plan years beginning in 2009 and 2010. • 30-year amortization of net investment loss was elected with respect to the loss incurred during the plan year ended in 2009. The loss was allocated to future years using the "prospective method" of IRS. The amount of each allocation is shown in Appendix C.
Effective date of amortization extension	May 1, 2008

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY
EIN: 38-6242188/PN: 001
ATTACHMENT TO 2018 SCHEDULE MB: LINE 8
STATEMENT BY ENROLLED ACTUARY

Schedule MB, line 8b(1) – Schedule of Projection of Expected Benefit Payments

Below is the projected expected benefit payout from the most recent actuarial valuation. The projections exclude any future accruals.

Plan Year Beginning	Expected Annual Benefit Payments
2018	$ 156,614,168
2019	159,561,984
2020	162,840,649
2021	166,608,770
2022	170,533,885
2023	174,264,454
2024	177,737,874
2025	180,922,723
2026	183,770,695
2027	185,675,813

Schedule MB, line 8b(2) - Schedule of Active Participant Data

Attached is the required Schedule of Active Participant Data from the most recent actuarial valuation.

Schedule MB, Line 8b(2) - Schedule of Active Participant Data
Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan EIN: 38-6242188/PN: 001
May 1, 2018

Attained age	Years of Service									
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up
Under 25	195	314	15	0	0	0	0	0	0	0
25 to 29	134	300	128	19	0	0	0	0	0	0
30 to 34	135	255	120	128	17	0	0	0	0	0
35 to 39	133	226	117	154	133	23	0	0	0	0
40 to 44	111	152	88	120	186	146	4	0	0	0
45 to 49	81	107	86	117	187	170	62	14	0	0
50 to 54	82	89	67	87	173	166	104	137	3	0
55 to 59	50	53	28	65	103	105	70	66	2	0
60 to 64	20	12	22	20	31	38	18	3	0	0
65 to 69	2	1	1	0	3	2	0	0	0	0
70 & up	2	0	1	0	0	0	0	0	0	0

May contain values based on estimated data

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY
EIN: 38-6242188/PN: 001
ATTACHMENT TO 2018 SCHEDULE MB: LINE 8
STATEMENT BY ENROLLED ACTUARY

Schedule MB, line 8e - Calculation of Minimum Required Contribution without Amortization Extension

Below is the detail of the contribution requirements with and without the amortization extension.

Minimum Required Contribution Plan Year Beginning May 1, 2018	*Without Extension*	*With Extension*
Minimum funding cost		
Total normal cost	$ 18,231,462	$ 18,231,462
Net amortization of unfunded liabilities	112,481,397	147,593,710
Interest to end of plan year	9,803,461	12,436,884
	140,516,320	178,262,056
Full funding limit	2,915,405,49 4	2,915,405,49 4
Net charge to funding std. acct. (lesser of above)	140,516,320	178,262,056
less: *Credit balance with interest to year end*	(684,494,585)	(351,864,301)
Minimum Required Contribution (not less than 0)	$ 825,010,905	$ 530,126,357
Effect of extension		$ 294,884,548

Carpenters Pension Trust Fund – Detroit and Vicinity
EIN: 38-6242188/PN: 001
Attachment to 2018 Schedule MB: Line 9
Statement by Enrolled Actuary

Schedule MB, lines 9c and 9h - Schedule of Funding Standard Account Bases

Attached is a schedule of minimum funding amortization bases maintained pursuant to IRC Section 431. Since some of the plan's amortization bases are operating under an extension, the amortization bases are shown both before and after the extension is applied.

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
Charges							
5/1/1977	Lath. UAL		45	4	0	291,741	81,027
5/1/1977	UAL		45	4	0	17,718,623	4,921,122
5/1/1978	Amendment		45	5	0	3,376,803	776,397
5/1/1979	Amendment		45	6	0	4,612,086	914,029
5/1/1980	Amendment		45	7	0	9,177,168	1,611,770
5/1/1984	Amendment		35	1	0	890,079	890,079
5/1/1984	Lath. ben		35	1	0	36,795	36,795
5/1/1985	Amendment		35	2	0	3,530,634	1,829,122
5/1/1985	Lath. ben		35	2	0	12,853	6,661
5/1/1986	Amendment		35	3	0	2,971,672	1,062,993
5/1/1987	Amendment		35	4	0	9,983,429	2,772,771
5/1/1987	Method change		35	4	0	3,315,808	920,922
5/1/1989	Amendment		35	6	0	3,524,816	698,551
5/1/1990	Amendment		35	7	0	13,325,591	2,340,349
5/1/1991	Assumption		35	8	0	7,890,551	1,253,145
5/1/1992	Amendment		35	9	0	3,951,665	576,270
5/1/1993	Assumption		35	10	0	67,524	9,150
5/1/1994	Amendment		35	11	0	5,390,050	685,401
5/1/1995	Assumption		35	12	0	13,015,155	1,565,182
5/1/1996	Assumption	19,314,830	35	13	0	12,256,551	1,403,110
5/1/1997	Amendment	115,128,332	35	14	0	76,976,056	8,434,955
5/1/1997	Assumption	2,432,702	35	14	0	1,626,528	178,234
5/1/1999	Amendment	22,642,031	35	16	0	16,508,890	1,679,932
5/1/1999	Experience	20,053,818	20	1	0	1,408,505	1,408,505
5/1/2000	Amendment	36,206,741	35	17	0	27,365,028	2,698,320
5/1/2000	Assumption	10,287,556	35	17	0	7,775,330	766,684
5/1/2000	Experience	5,279,519	20	2	0	760,722	394,108
5/1/2001	Experience	33,142,699	20	3	0	7,252,134	2,594,157
5/1/2002	Amendment	65,943,178	35	19	0	52,995,052	4,950,029
5/1/2002	Experience	70,475,288	20	4	0	20,624,901	5,728,304
5/1/2003	Assumption	85,964,800	35	20	0	70,925,316	6,471,832
5/1/2003	Experience	254,431,353	20	5	0	92,735,197	21,321,738
5/1/2004	Experience	20,035,740	20	6	0	8,687,262	1,721,652
5/1/2005	Experience	116,546,347	20	7	0	58,221,566	10,225,349
5/1/2006	Assumption	32,822,460	35	23	0	28,898,700	2,487,581

Carpenters Pension Trust Fund-Detroit and Vicinity
EIN: 38-6242188/PN: 001
Attachment to 2018 Schedule MB: Lines 9c and 9h
Schedule of Funding Standard Account Bases
Bases Shown: With Extension

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
5/1/2006	Experience	61,302,815	20	8	0	34,461,935	5,473,101
5/1/2007	Assumption	97,147,893	35	24	0	87,074,795	7,375,039
5/1/2007	Experience Loss	36,021,921	20	9	0	22,380,357	3,263,726
5/1/2008	Assumptions	29,589,137	20	10	0	20,059,193	2,718,458
5/1/2008	Experience	21,904,410	20	10	0	14,849,531	2,012,435
5/1/2009	Experience	29,524,251	15	6	0	15,799,966	3,131,258
5/1/2009	Relief 09 Asset	163,705,587	29	20	0	143,228,617	13,069,403
5/1/2010	Experience	16,798,389	15	7	0	10,127,147	1,778,612
5/1/2011	Assumptions	14,968,746	15	8	0	9,963,278	1,582,326
5/1/2011	Expereince	19,762,045	15	8	0	13,153,724	2,089,019
5/1/2011	Relief 09 Asset	83,446,610	27	20	0	74,499,236	6,797,947
5/1/2012	Assumptions	3,586,082	15	9	0	2,595,395	378,487
5/1/2012	Experience	127,391,921	15	9	0	92,198,862	13,445,352
5/1/2012	Relief 09 Asset	9,268,532	26	20	0	8,370,561	763,802
5/1/2013	Assumptions	112,407,257	15	10	0	87,409,320	11,845,867
5/1/2013	Relief 09 Asset Loss	42,325,699	25	20	0	38,709,164	3,532,155
5/1/2014	Relief 09 Asset Loss	39,456,467	24	20	0	36,623,855	3,341,874
5/1/2015	Assumptions	66,762,182	15	12	0	58,504,254	7,035,631
5/1/2015	Experience	53,022,966	15	12	0	46,464,466	5,587,744
5/1/2016	Amendment	19,478,191	15	13	0	17,930,727	2,052,679
5/1/2016	Experience	83,462,560	15	13	0	76,831,792	8,795,575
5/1/2017	Assumptions	46,472,895	15	14	0	44,693,576	4,897,475
5/1/2017	Experience	62,924,769	15	14	0	60,515,554	6,631,231
5/1/2018	Experience	49,896,267	15	15	0	49,896,267	5,258,242
				Total Charges:		**1,654,442,353**	**218,273,664**

Schedule of Funding Standard Account Bases
Bases Shown: With Extension

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
Credits							
5/1/1989	Assumption		30	1	0	2,565,526	2,565,526
5/1/1990	Lath. assum		30	2	0	52,463	27,180
5/1/1992	Assumption		30	4	0	1,476,671	410,128
5/1/1999	Assumptions	104,779,461	30	11	0	66,413,367	8,445,154
5/1/2009	Amendment	19,793,553	15	6	0	10,592,560	2,099,247
5/1/2009	Method (Relief)	77,104,031	30	21	0	68,231,714	6,095,115
5/1/2010	Amendment	101,829,896	15	7	0	61,389,586	10,781,743
5/1/2010	Relief 09 Asset	55,383,209	28	20	0	48,926,246	4,464,449
5/1/2013	Amendment	186,630,145	15	10	0	145,125,984	19,667,733
5/1/2013	Experience Gain	5,974,815	15	10	0	4,646,087	629,647
5/1/2014	Amendment	66,875,803	15	11	0	55,422,932	7,047,605
5/1/2014	Assumptions	24,371,644	15	11	0	20,197,854	2,568,369
5/1/2014	Experience	25,585,607	15	11	0	21,203,922	2,696,300
5/1/2016	Assumptions	10,447,082	15	13	0	9,617,103	1,100,950
5/1/2018	Assumptions	19,745,105	15	15	0	19,745,105	2,080,808
				Total Credits:		**535,607,120**	**70,679,954**
				Net Charges:		**1,118,835,233**	**147,593,710**
				Less Credit Balance:		-327,315,629	
				Less Reconciliation Balance:		0	
				Unfunded Actuarial Liability:		**1,446,150,862**	

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
Charges							
5/1/1979	Amendment		40	1	0	1,143,729	1,143,729
5/1/1980	Amendment		40	2	0	3,799,344	1,968,335
5/1/1989	Amendment		30	1	0	874,096	874,096
5/1/1990	Amendment		30	2	0	5,516,787	2,858,094
5/1/1991	Assumption		30	3	0	4,189,993	1,498,800
5/1/1992	Amendment		30	4	0	2,437,298	676,928
5/1/1993	Assumption		30	5	0	46,023	10,582
5/1/1994	Amendment		30	6	0	3,944,604	781,747
5/1/1995	Assumption		30	7	0	10,042,004	1,763,658
5/1/1996	Assumption	19,314,830	30	8	0	9,848,582	1,564,111
5/1/1997	Amendment	115,128,332	30	9	0	63,863,171	9,313,161
5/1/1997	Assumption	2,432,702	30	9	0	1,349,453	196,791
5/1/1999	Amendment	22,642,031	30	11	0	14,351,418	1,824,932
5/1/2000	Amendment	36,206,741	30	12	0	24,206,279	2,911,009
5/1/2000	Assumption	10,287,556	30	12	0	6,877,819	827,116
5/1/2002	Amendment	65,943,178	30	14	0	48,157,392	5,277,036
5/1/2003	Assumption	85,964,800	30	15	0	65,134,330	6,864,082
5/1/2004	Experience	20,035,740	15	1	0	2,154,312	2,154,312
5/1/2005	Experience	116,546,347	15	2	0	24,103,691	12,487,453
5/1/2006	Assumption	32,822,460	30	18	0	27,178,755	2,604,837
5/1/2006	Experience	61,302,815	15	3	0	18,299,755	6,545,995
5/1/2007	Assumption	97,147,893	30	19	0	82,386,702	7,695,370
5/1/2007	Experience Loss	36,021,921	15	4	0	13,803,713	3,833,805
5/1/2008	Assumption	29,589,137	15	5	0	13,672,370	3,143,561
5/1/2008	Experience	21,904,410	15	5	0	10,121,457	2,327,132
5/1/2009	Experience	29,524,251	15	6	0	15,799,966	3,131,258
5/1/2009	Relief08 Asset Loss	163,705,587	29	20	0	143,228,617	13,069,403
5/1/2010	Experience	16,798,389	15	7	0	10,127,147	1,778,612
5/1/2011	Assumptions	14,968,746	15	8	0	9,963,278	1,582,326
5/1/2011	Experience	19,762,045	15	8	0	13,153,724	2,089,019
5/1/2011	Relief 09 Asset	83,446,610	27	20	0	74,499,236	6,797,947
5/1/2012	Assumptions	3,586,082	15	9	0	2,595,395	378,487
5/1/2012	Experience	127,391,917	15	9	0	92,198,857	13,445,352
5/1/2012	Relief 09 Asset	9,268,532	26	20	0	8,370,561	763,802
5/1/2013	Assumptions	112,407,257	15	10	0	87,409,320	11,845,867

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
5/1/2013	Relief 09 Asset Loss	42,325,699	25	20	0	38,709,164	3,532,155
5/1/2014	Relief 09 Asset Loss	39,456,467	24	20	0	36,623,855	3,341,874
5/1/2015	Assumptions	66,762,182	15	12	0	58,504,254	7,035,631
5/1/2015	Experience	53,022,966	15	12	0	46,464,466	5,587,744
5/1/2016	Amendment	19,478,191	15	13	0	17,930,727	2,052,679
5/1/2016	Experience	83,462,560	15	13	0	76,831,792	8,795,575
5/1/2017	Assumptions	46,472,895	15	14	0	44,693,576	4,897,475
5/1/2017	Experience	62,924,769	15	14	0	60,515,554	6,631,231
5/1/2018	Experience	49,896,267	15	15	0	49,896,267	5,258,242
				Total Charges:		**1,345,018,833**	**183,161,351**

Credits

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
5/1/1989	Assumption		30	1	0	2,565,526	2,565,526
5/1/1990	Lath. assum		30	2	0	52,463	27,180
5/1/1992	Assumption		30	4	0	1,476,671	410,128
5/1/1999	Assumptions	104,779,461	30	11	0	66,413,367	8,445,154
5/1/2009	Amendment	19,793,553	15	6	0	10,592,560	2,099,247
5/1/2009	Method (Relief)	77,104,031	30	21	0	68,231,714	6,095,115
5/1/2010	Amendment	101,829,896	15	7	0	61,389,586	10,781,743
5/1/2010	Relief08 Asset	55,383,209	28	20	0	48,926,246	4,464,449
5/1/2013	Amendments	186,630,145	15	10	0	145,125,984	19,667,733
5/1/2013	Experience	5,974,815	15	10	0	4,646,087	629,647
5/1/2014	Amendment	66,875,803	15	11	0	55,422,932	7,047,605
5/1/2014	Assumptions	24,371,644	15	11	0	20,197,854	2,568,369
5/1/2014	Experience	25,585,607	15	11	0	21,203,922	2,696,300
5/1/2016	Assumptions	10,447,082	15	13	0	9,617,103	1,100,950
5/1/2018	Assumptions	19,745,105	15	15	0	19,745,105	2,080,808
				Total Credits:		**535,607,120**	**70,679,954**

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
					Net Charges:	**809,411,713**	**112,481,397**
					Less Credit Balance:	-636,739,149	
					Less Reconciliation Balance:	0	
					Unfunded Actuarial Liability:	**1,446,150,862**	

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY
EIN: 38-6242188/PN: 001
ATTACHMENT TO 2018 SCHEDULE MB: LINE 10
STATEMENT BY ENROLLED ACTUARY

Schedule MB, line 10- Accumulated Funding Deficiency

Pursuant to IRC Section 4971(g)(1), the excise tax related to the accumulated funding deficiency that would otherwise be assessed under IRC Section 4971(a) and/or (b) is not assessed because:

- The Plan is in critical and declining status for the plan year ended April 30, 2019.
- The rehabilitation period is May 1, 2010 to April 30, 2020. Since the rehabilitation period has not yet expired, the Plan has not failed to meet the requirements of IRC Section 432(e) by the end of the rehabilitation period.
- The Plan has not received certifications under IRC Section 432(b)(3)(A)(ii) for 3 consecutive plan years that it is not meeting its requirements under the rehabilitation plan.

CARPENTERS PENSION TRUST FUND – DETROIT AND VICINITY
EIN: 38-6242188/PN: 001
ATTACHMENT TO 2018 SCHEDULE MB: LINE 11
STATEMENT BY ENROLLED ACTUARY

Schedule MB, line 11 - Justification for Change in Actuarial Assumptions

The assumptions and methods differ from those used the preceding year in the following respects:

- The mortality projection scale was updated from MP-2017 to MP-2018. This change was made in order to reflect the latest mortality improvement data available.
- The assumed withdrawal select rates were adjusted according to the schedule in Appendix B. This change reflects our best estimate of future withdrawal patterns based on recent plan experience.
- Continuing inactive vested participants and deferred beneficiaries over age 70 are no longer assumed to be deceased.
- The percentage of participants married and spousal age difference assumptions were changed from 100% married with the male spouse 3 years older to 65% married with the male spouse 2 years older. This change is based on recent retirement experience and represents our best estimate.
- We changed the optional form assumption from 100% electing a life annuity to the percentages in the below table. This change was made based on recent retirement experience and represents our best estimate.

Optional form	Married Participants	Single Participants
Life annuity	15%	85%
Life-ten year certain	5%	15%
Joint & 50% survivor	20%	n/a
Joint & 75% survivor	15%	n/a
Joint & 100% survivor	45%	n/a

- The assumed percentage of contributions that are non-credited was decreased from 63.1% to 61.0% to match the plan document.
- The assumed operational expenses were decreased from $4,300,000 to $4,000,000 to reflect our best estimate of future expenses based on recent plan experience.
- The pop-up load on liabilities for retirees receiving a joint and survivor form of benefit was eliminated and was replaced with individually estimated pop-up amounts should the spouse predecease the participant.
- The current liability interest rate was changed from 3.05% to 2.99%. The new rate is within established statutory guidelines.

Actuary's Statement of Reliance

In completing this Schedule MB, the enrolled actuary has relied upon the correctness of the financial information presented in the pension fund audit and upon the accuracy and completeness of participant census data provided by the plan administrator.

CARPENTERS PENSION TRUST FUND
DETROIT AND VICINITY
2014 UPDATE TO THE
ALL REASONABLE MEASURES PLAN
COVERING PLAN YEARS 2013 AND THEREAFTER
(As Updated for the Plan Year Beginning May 1, 2014)

WHEREAS, the Trustees of the Carpenters Pension Trust Fund - Detroit and Vicinity ("the Fund") adopted the initial Rehabilitation Plan under the Pension Protection Act of 2006 (PPA) on September 27, 2008, well in advance of its Rehabilitation Period in order to avoid any employer contribution surcharges.

The Rehabilitation Plan included two schedules: a Default Schedule, and a Preferred Schedule. The Default Schedule was included for purposes of statutory compliance, and had the bargaining parties been unable to agree to the contribution increases required by the Preferred Schedule, the Default Schedule would have been implemented. However, the bargaining parties agreed to collective bargaining agreements that required pension contributions consistent with the Preferred Schedule, since the adoption of said Plan and have continued to do so since then. The Rehabilitation Plan has been reviewed each year to be sure that it remains viable and revised, as necessary, based on projections made by the Fund's actuary.

In 2013 the Trustees, in conjunction with the Fund's actuary and advisors, determined that adherence to the Rehabilitation Plan's Preferred Schedule was no longer prudent and that further changes were needed to protect the Fund. These changes were summarized in the "All Reasonable Measures Plan" which replaced the Fund's Rehabilitation Plan that was in place since its adoption. The Trustees have updated the All Reasonable Measures Plan for this plan year. No changes to benefits or contributions have been made as part of those updates. The All Reasonable Measures Plan was also incorporated into the Plan document. This document is only a summary of Pension Plan changes – all benefit determinations shall be made in accordance with the Plan document, which shall govern in the event of any conflict with this or any other notice provided by the Fund, although this All Reasonable Measures Plan is an expression of the Trustees' intent for interpretation purposes and to the extent necessary, may be considered as an amendment or supplement to the Pension Plan.

I. Applicable Standards under the PPA

The PPA provides that rehabilitation plans must include one or more schedules showing revised benefit structures, revised contributions, or both, which, if adopted by the plan sponsor and agreed upon by the bargaining parties, may reasonably be expected to enable a pension fund to emerge from critical status by the end of the pension fund's rehabilitation period.

Alternatively, the PPA provides that if the Fund determines that, after exhaustion of all reasonable measures, it cannot emerge from critical status within the statutory time period, then an alternative work-out plan can be adopted that is designed to do so on a more prudent time table, or, if emergence is not possible, one that will forestall or prevent insolvency.

II. The Board's decision to employ an alternative work-out plan

The goal of a PPA all reasonable measures work-out plan is to, by adopting various changes in benefits and contributions, allow a pension plan to emerge from critical status by the end of its rehabilitation period, based on reasonably anticipated experience and reasonable actuarial assumptions. However, in the event the Fund "determines that, based on reasonable actuarial assumptions and upon exhaustion of all reasonable measures" the plan is not reasonably expected to emerge from critical status by the close of the plan's rehabilitation period, then the Fund can move to adopt a workout plan that includes reasonable measures designed to allow the pension plan to come out of critical status at a latter date or to forestall possible insolvency under Section 4245 of ERISA.

Accordingly, and for the reasons set forth herein, the Fund's Board of Trustees determined that, on the basis of reasonable actuarial assumptions and upon the exhaustion of all reasonable measures and other considerations, this "All Reasonable Measures" Work-out Plan is the most prudent course of action for the Fund. The All Reasonable Measures Work-out Plan was adopted, effective May 1, 2013, to replace the Fund's Rehabilitation Plan, previously in place. This 2014 Update to the All Reasonable Measures Plan is hereby adopted, effective as of May 1, 2014 and made a part of the Plan document.

A. Alternatives considered & rationale for adoption by the Plan

The Board of Trustees considered numerous alternatives (including combinations of contribution rate increases and benefit adjustments) that, together with applicable amortization extensions, were projected to enable the Fund to emerge from critical status by the end of its rehabilitation period. The prior Rehabilitation Plan (i.e., the Rehabilitation Plan that the 2013 All Reasonable Measures Plan replaced) initially called for $1.55 per hour in uncredited contributions through 2015 and $.75 per hour in 2016. This would have resulted in an average pension contribution rate of over $19.00 per hour, with approximately two thirds of that amount being non-benefit-credited. Moreover, additional uncredited contributions were required for future plan years based on lower than expected work hours and disappointing investment returns in the Plan Year ending April 30, 2013. The Fund determined that to continue with the current Rehabilitation Plan would seriously jeopardize the industry on which the Plan relies, and would drastically increase the likelihood of a significant number of employer withdrawals from the Plan, including a possible mass withdrawal, which would almost certainly drive the Plan into insolvency.

In addition, to completely reduce benefits (accrued and ancillary) to the bare minimum permitted by law, would drive away future and current participants and severely hamper recruiting efforts since current and future participants would be shouldering the vast majority of the PPA uncredited funding obligations. This too would pose a severe risk to the Fund, since its long term survival depends upon the influx and retention of new and younger participants. With this in mind, the Board determined that while some benefit reductions had to be made, especially to ancillary benefits, their severity must be tempered by the Plan's need to retain its current and future pre-retirement age participants. In making this decision, the Board evaluated numerous options and consulted with various parties to gauge the impact of those options. In the end, adoption of the All Reasonable Measures Plan was deemed the most prudent course of action.

B. Prior Benefit Changes

As required by law, the Fund ceased paying all lump sum payments in excess of the de minimis amount of $5,000 on August 27, 2008 when the required "notice of the plan's critical status" was sent. The Fund also eliminated the so-call "Index 80" benefit and substituted an "Index 85" benefit with minimum age 55 requirement, as of May 1, 2010. Other benefit modifications were also made, in accordance with the PPA provisions.

C. Benefit Changes under the All Reasonable Measures Plan

The following benefit changes were adopted, effective August 1, 2013:

- No unreduced early retirements will be provided until age 62, a change from the previous rule that allowed unreduced benefits to commence upon satisfaction of the "Index 80" or "Index 85" rule. Active Participants may now retire as early as age 55; however, they will receive a reduced benefit.

- Benefits for early retirees (including their surviving spouses or beneficiaries) who entered pay status on or after September 1, 2008 but prior to August 1, 2013 will be recalculated as if the new early retirement reduction factors described herein had been in effect when they initially retired; however the amount of the new early retirement benefit shall not be less than 95% of the original early retirement benefit., i.e., subject to a 5% cap;

- Benefits for early retirees who retire on or after August 1, 2013 and who have met their applicable Index requirements will have their retirement benefits reduced at the rate of 1/3 of 1% per each month (4% per year) between their retirement age and age 62, unless they come within the grandfathered exception;

- Benefits for early retirees who retire on or after August 1, 2013 and who have not met their applicable Index requirements will have their retirement benefit reduced at the rate of 5/9% per month (6.66% per year) for each month between their retirement age and age 62, unless they come within the grandfathered exception;

- Vested deferred Participants who fail to cure a break in service by working 435 hours in the two years prior to their retirement will have their retirement benefit <u>reduced</u> at the rate of 5/9% per month (6.66% per year) for each month until reaching age 65;

- <u>Grandfathered exception</u>: Active Participants who meet the applicable Index criteria by August 1, 2015 will not have their benefit reduced by more than 5%.

- Disability benefits (which are ancillary plan benefits) for Participants who entered pay status on or after September 1, 2008 (or alternatively as of December 1, 2014, if required by applicable law) will be capped in accordance with the following schedule before they convert to regular retirement benefits. Disabled retirees currently in pay status shall begin receiving the capped benefit effective August 1, 2013.

Credit Years	Cap on Monthly Benefit
5-9	$525
10-15	$625
16-19	$725
20-24	$1,050
25+	$1,350

The foregoing disability benefit changes may be implemented at a later date, following the conclusion of litigation involving same.

- Participants receiving disability benefits who convert to an Early Retirement Benefit prior to reaching age 62 will be subject to an early retirement reduction factor. Such factor shall be determined in accordance with the rules described herein based on the Participant's age and service at the time of conversion;

- Effective August 1, 2013, no pre-retirement death benefits will be payable to unmarried active participants. Surviving spouses of active participants who die prior to retirement will only be entitled to a survivor annuity equal to 50% of the joint and 50% survivor annuity that the participant could have received at his earliest retirement with such annuity commencing at the participant's earliest retirement date;

- Effective August 1, 2013, Participants must obtain an award for Social Security Disability benefits from the Social Security Administration in order to be eligible for Plan disability benefits. Participants currently in pay status whose benefits commenced on or after September 1, 2008 will have until August 1, 2015 to obtain such an award in order to continue receiving their disability benefits. The foregoing may be implemented at a later date, following the conclusion of litigation involving same;

- Retiree death benefits will no longer be payable in the form of a lump sum on or after August 1, 2013 even when the Plan emerges from the PPA "red zone." Benefits that were payable in a lump sum prior to August 1, 2013, but have not been paid out in that form due to the Plan's "red zone" status, will be paid in a lump sum when the Plan emerges from the "red zone."

- The suspension of benefits rules will be tightened. Effective for early retirements that commenced on or after September 1, 2008, early retirees who work <u>any</u> hours in prohibited employment as provided in the Plan in a restricted month will have their benefits suspended to the extent permitted by law.

D. Changes to Actuarial Assumptions

Taking into account the above changes to the Plan, the actuary has adjusted the actuarial assumptions for the Plan, which are detailed below.

- Rate of return on investments of 7.5% (reduced from 7.75%) for the Plan Year ending April 30, 2013 and all subsequent Plan Years going forward.

- Contribution Hours
    - Historic Contribution Hours
        - Seven million (7.0) man hours for the Plan Year ending April 30, 2013.
    - Current and Future Contribution Hours
        - Seven and one-half (7.5) million man hours for the Plan Years ending April 30, 2014 and April 30, 2015;
        - Eight million (8.0) million man hours for Plan years going forward.

- Based on the foregoing, the Fund is projected to enter the Green Zone reaching a 100% funded level in 2039.

E. Funding Requirements

In the 2013 Plan Year, there was a contribution rate increase applicable to the Commercial, Display, Floorlayers, Millwrights and Roadbuilders contracts of $1.55 per hour uncredited, as of June 1, 2013. No further uncredited contributions are required under this All Reasonable Measures Plan, provided the Fund's actuary determines that the aforesaid actuarial assumptions are met on an ongoing basis.

F. Updating

This All Reasonable Measures Plan will be evaluated from time-to-time and updated as necessary, to take into account the Fund's investments returns, work hours and other actuarial assumptions. No further uncredited contributions or benefit adjustments are required for the current Plan Year.

IN WITNESS WHEREOF, we have approved and adopted this All Reasonable Measures Plan on this 13th day of January, 2015.

UNION TRUSTEES **EMPLOYER TRUSTEES**

[redacted]

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Carpenters Pension Trust Fund
Detroit and Vicinity Pension Plan
Detroit, Michigan

Actuarial Valuation Report
For Plan Year Commencing
May 1, 2018

United Actuarial Services, Inc.
Actuaries and Consultants

February 4, 2019

Board of Trustees
Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan
Detroit, Michigan

Dear Trustees:

We have been retained by the Board of Trustees of the Carpenters Pension Trust Fund - Detroit and Vicinity Pension Plan to perform annual actuarial valuations of the pension plan. This report presents the results of our actuarial valuation for the plan year beginning May 1, 2018. The valuation results contained herein are based on current plan provisions summarized in Appendix A, the actuarial assumptions and methods listed in Appendix B and on financial statements audited by Bultynck & Co., P.L.L.C. Participant data was provided by BeneSys, Inc. While we have reviewed the data for reasonableness in accordance with Actuarial Standards of Practice No. 23, we have not audited it. The data was relied on as being both accurate and comprehensive.

This report has been prepared in order to (1) assist the Trustees in evaluating the current actuarial position of the plan, (2) determine the minimum required and maximum deductible contribution amounts under Internal Revenue Code §431 and §404, (3) provide the fund's auditor with information necessary to comply with Accounting Standards Codification 960, and (4) document the plan's certified status under Internal Revenue Code §432 for the current year and provide the basis to certify such status for the subsequent year. In addition, information contained in this report will be used to prepare Schedule MB of Form 5500 that is filed annually with the IRS and could be used to calculate employer withdrawal liability. We are not responsible for the use of, or reliance upon, this report for any other purpose.

We have prepared this report in accordance with generally accepted actuarial principles and practices and have performed such tests as we considered necessary to assure the accuracy of the results. The results have been determined on the basis of actuarial assumptions that, in our opinion, are appropriate for the purposes of this report, are individually reasonable and in combination represent our best estimate of anticipated experience under the plan. Actuarial assumptions may be changed from previous valuations due to changes in mandated requirements, plan experience resulting in changes in expectations about the future, and/or other factors. An assumption change does not indicate that prior assumptions were unreasonable when made. For purposes of current liability calculations, assumptions are prescribed by regulation or statute. By relying on this valuation report, the Trustees confirm they have accepted the assumptions contained in the report.

The results are based on our best interpretation of existing laws and regulations and are subject to revision based on future regulatory or other guidance.

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

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amortization period or additional cost or contribution requirements based on the plan's funded status), and changes in plan provisions or applicable law.

United Actuarial Services, Inc. does not provide, nor charge for, investment, tax or legal advice. None of the comments made herein should be construed as constituting such advice. We are not aware of any direct or material indirect financial interest or relationship that could create a conflict of interest that would impair the objectivity of our work.

The undersigned actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

We are available to respond to any questions you may have about this report.

UNITED ACTUARIAL SERVICES, INC.

Enrolled Actuary Consultant

[redacted]

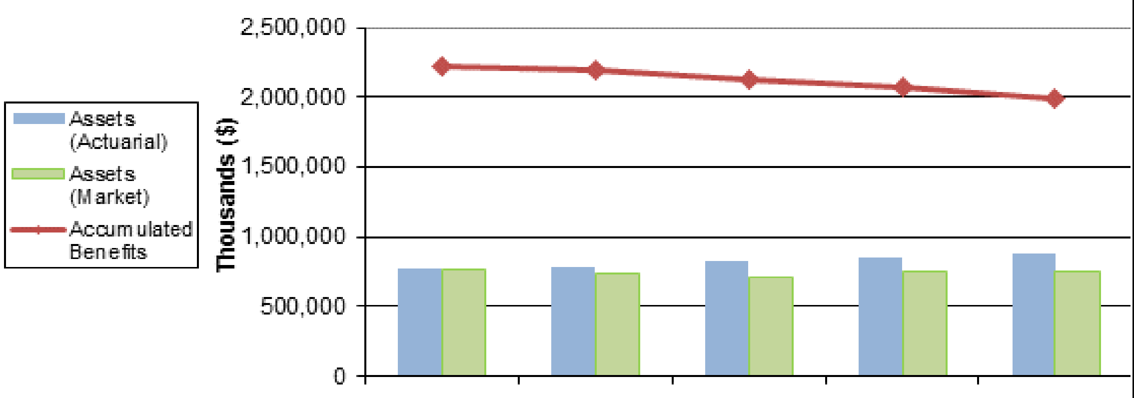
Angela L. Jeffries, EA, MAAA
Consulting Actuary

Andrew T. Smith, FCA, ASA, EA
President

PART I: SUMMARY OF RESULTS

5 - YEAR SUMMARY OF VALUATION RESULTS

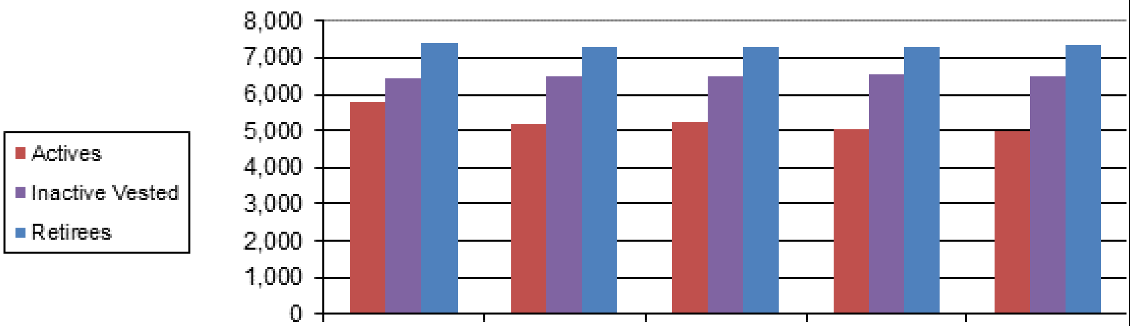
Actuarial Study as of May 1,	*2018*	*2017*	*2016*	*2015*	*2014*
PPA funded status	Crit. & Decl.	Critical	Critical	Critical	Critical
Progress under FIP/RP*	Yes	Yes	Yes	Yes	Yes
Improvements restricted**	Yes	Yes	Yes	Yes	Yes
Funded ratio					
PPA certification	34.5%	36.4%	38.9%	42.5%	43.9%
Valuation report (AVA)	34.8%	35.5%	38.7%	41.4%	44.3%
Valuation report (MVA)	34.3%	33.4%	33.6%	36.0%	37.5%
Credit Balance/(Funding Deficiency) ($ 000)***	(327,316)	(258,325)	(190,016)	(141,912)	(106,157)
Date of first projected funding deficiency***					
PPA certification	Existing	Existing	Existing	Existing	Existing
Valuation report	Existing	Existing	Existing	Existing	Existing
Net investment return					
On market value	7.87%	11.13%	-0.22%	4.42%	10.51%
On actuarial value	2.56%	1.78%	-0.66%	1.12%	7.78%
Asset values ($ 000)					
Market	761,729	734,240	712,660	746,439	747,282
Actuarial	771,737	781,239	821,814	859,594	883,024
Accum. ben. ($ 000)	2,217,888	2,199,043	2,123,936	2,076,091	1,991,086



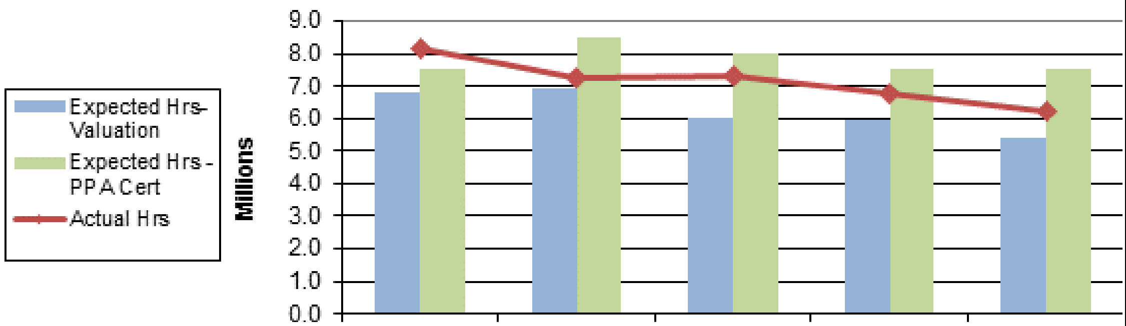
* Scheduled progress for this Plan means using all reasonable measures to forestall insolvency.
** Benefit improvement restrictions due to fund being in critical and declining status and due to fund having an amortization extension. Restrictions will remain in place until plan is in safe status again.
*** With amortization extension.

5 - YEAR SUMMARY OF DEMOGRAPHICS

Actuarial Study as of May 1,	*2018*	*2017*	*2016*	*2015*	*2014*
Participant counts					
Active	5,803	5,208	5,246	5,054	4,986
Inactive vested	6,438	6,465	6,495	6,515	6,482
Receiving benefits	7,395	7,314	7,290	7,276	7,363
Total	19,636	18,987	19,031	18,845	18,831
Average entry age	28.5	28.1	28.1	27.9	27.9
Average attained age	41.6	42.3	42.1	42.5	42.4



Hours worked in prior plan year (thousands)					
Expected hours valuation	6,825	6,908	5,983	5,953	5,422
Expected hours PPA cert	7,500*	8,500*	8,000	7,500	7,500
Actual hours worked	8,185	7,266	7,306	6,772	6,202



* The 2017 PPA cert expected hours of 7,500,000 in the 2018 column is different than the 9,200,000 expected hours used in the 2017 valuation projections. Likewise, the 2016 PPA cert expected hours of 8,500,000 in the 2017 column is different than the 7,300,000 expected hours used in the 2016 valuation projections.

CHANGES FROM PRIOR STUDY

Changes in Plan Provisions

The plan provisions underlying this valuation are the same as those valued last year.

Changes in Actuarial Assumptions and Methods

The actuarial assumptions and methods used in this valuation differ from those used in the prior valuation in the following respects:

- The mortality projection scale was updated from MP-2017 to MP-2018. This change was made in order to reflect the latest mortality improvement data available.

- The assumed withdrawal select rates were adjusted according to the schedule in Appendix B. This change reflects our best estimate of future withdrawal patterns based on recent plan experience.

- Continuing inactive vested participants and deferred beneficiaries over age 70 are no longer assumed to be deceased.

- The percentage of participants married and spousal age difference assumptions were changed from 100% married with the male spouse 3 years older to 65% married with the male spouse 2 years older. This change is based on recent retirement experience and represents our best estimate.

- We changed the optional form assumption from 100% electing a life annuity to the percentages in the below table. This change was made based on recent retirement experience and represents our best estimate.

Optional form	Married Participants	Single Participants
Life annuity	15%	85%
Life-ten year certain	5%	15%
Joint & 50% survivor	20%	n/a
Joint & 75% survivor	15%	n/a
Joint & 100% survivor	45%	n/a

- The assumed percentage of contributions that are non-credited was decreased from 63.1% to 61.0% to match the plan document.

- The assumed operational expenses were decreased from $4,300,000 to $4,000,000 to reflect our best estimate of future expenses based on recent plan experience.

- The pop-up load on liabilities for retirees receiving a joint and survivor form of benefit was eliminated and was replaced with individually estimated pop-up amounts should the spouse predecease the participant.

- The current liability interest rate was changed from 3.05% to 2.99%. The new rate is within established statutory guidelines.

HISTORY OF MAJOR ASSUMPTIONS

Assumption	Actuarial Study as of May 1, 2018	2017	2016	2015	2014
Future rate of net investment return	7.50%	7.50%	7.50%	7.50%	7.50%
Mortality table	RP 2014	RP 2014	RP 2014	RP 2014	RP-2000G
Adjustment	100%	100%	115%	2 yr. sf	2 yr. sf
Projection scale	MP-2018	MP-2017	MP-2016	MP-2015	AA
Future expenses	$4.0M	$4.3M	$4.3M	$4.0M	$4.0M
Average future hourly contribution rate*					
Credited	$5.74	$5.72	$5.74	$5.85	$5.82
Non-credited	8.99	9.78	9.81	10.00	10.20
Total	$14.73	$15.50	$15.55	$15.85	$16.02
Average future annual hours					
Vested	1,600	1,600	1,600	1,400	1,400
Non-vested	600	600	600	500	500

* Actual average derived from application of assumptions specified in Appendix B.

EXPERIENCE VS. ASSUMPTIONS

Comparing the prior year's experience to assumptions provides indications as to why overall results may differ from those expected

Actuarial assumptions are used to project certain future events related to the pension plan (e.g. deaths, withdrawals, investment income, expenses, etc.). While actual results for a single plan year will rarely match expected experience, it is intended that the assumptions will provide a reasonable long term estimate of developing experience.

The following table provides a comparison of expected outcomes for the prior plan year with the actual experience observed during the same period. This display may provide insight as to why the plan's overall actuarial position may be different from expected.

Plan Year Ending April 30, 2018	*Expected*	*Actual*
Decrements		
Terminations		759
less: *Rehires*		356
Terminations (net of rehires)	792.8	403
Retirements	96.9	97
Disabilities	6.8	6
Deaths - pre-retirement	49.0	42
Deaths - post-retirement	269.1	298
Monthly benefits of deceased retirees	$ 303,227	$ 302,768
Financial assumptions		
Rate of net investment return on actuarial value	7.50%	2.56%
Administrative expenses	$ 4,300,000	$ 4,016,068
Other demographic assumptions		
Average retirement age from active (new retirees)	58.9	58.9
*Average retirement age from inactive (new retirees)**	61.6	63.4
Average entry age (new entrants)	28.1	32.5
Hours worked per vested active	1,600	1,756
Hours worked per non-vested active	600	712
Total hours worked (valuation assumption)	6,824,800	8,184,597
Total hours worked (PPA certification assumption)	7,500,000	8,184,597
Unfunded liability (gain)/loss		
(Gain)/loss due to asset experience		$ 37,887,750
(Gain)/loss due to liability experience		12,008,517
Total (gain)/loss		$ 49,896,267

* Expected average based on the average for the total group of participants.

PLAN MATURITY

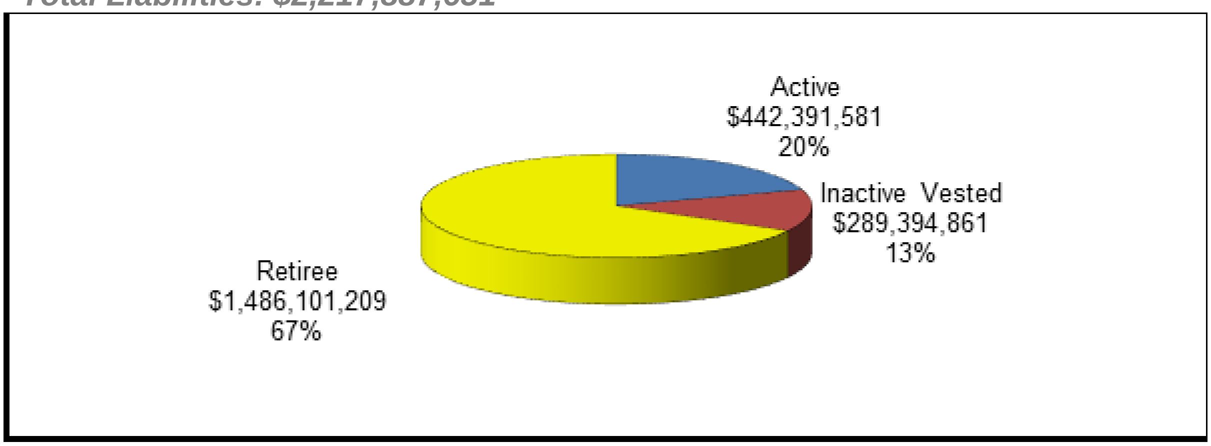
Measures of plan maturity can play a part in understanding risk and a plan's ability to recover from adverse experience

When a new pension plan is first established, its liabilities are typically limited to active plan participants. However, as people become vested and retire, a plan begins to develop liabilities attributable to nonactive participants (retirees and inactive vested participants). The process of adding nonactive liabilities (often referred to as "maturing") is a natural outgrowth of the operation of the plan. As a plan matures, its liabilities tend to balloon in relation to its contribution base, making it more difficult to correct for adverse outcomes by increasing contribution rates or reducing future benefit accruals.

Headcount ratios show the number of retiree or inactive participants supported by each active participant. While there is no hard and fast rule, we generally consider a plan to be mature if each active is supporting more than 1 retiree or more than 2 nonactives. A negative net cash flow (benefits payments and expenses greater than contributions) can also be an indicator of a mature plan. A negative cash flow, when expressed as a percentage of assets, in excess of the assumed rate of return on fund assets is not sustainable in the long term.

Actuarial Study as of May 1,	*2018*	*2017*	*2016*	*2015*	*2014*
Retiree/active headcount ratio	1.27	1.40	1.39	1.44	1.48
Nonactive/active headcount ratio	2.38	2.65	2.63	2.73	2.78
Cash flow					
Contr.-ben.-exp. ($000)	(29,243)	(54,819)	(32,245)	(34,373)	(43,975)
Percent of assets	-3.84%	-7.47%	-4.52%	-4.60%	-5.88%

Liabilities of Actives, Retirees, and Inactive Vesteds
Total Liabilities: $2,217,887,651



UNFUNDED VESTED BENEFITS/EMPLOYER WITHDRAWAL LIABILITY

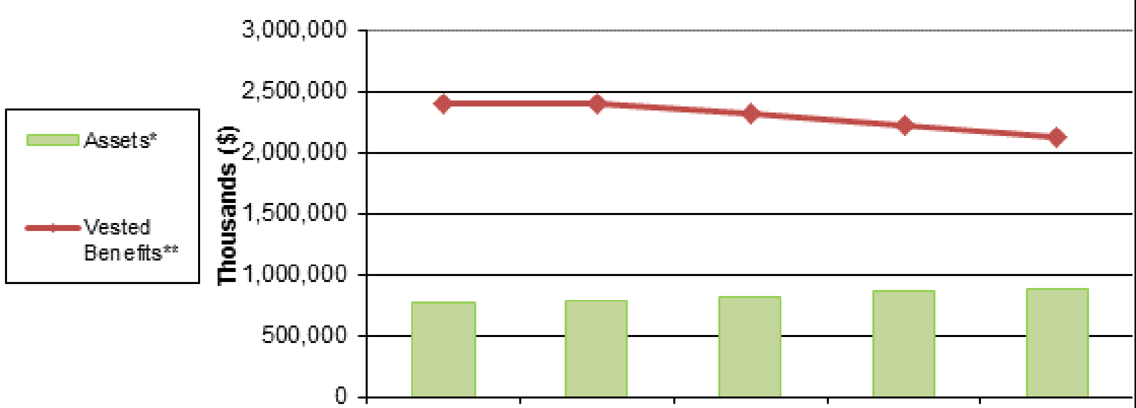
An employer withdrawing during the coming year may have withdrawal liability

The following table shows a history of the plan's unfunded vested benefits (UVB) required to compute a specific employer withdrawal liability under the presumptive method. If all unfunded vested benefits since the inception of the Multiemployer Pension Plan Amendments Act of 1980 (MPPAA) are zero ($0) or less, there will be no withdrawal liability assessed to a withdrawing employer. Otherwise, an employer may be assessed withdrawal liability payments pursuant to MPPAA. The display does not reflect adjustments for prior employer withdrawals.

In accordance with IRC Section 432(e)(9)(A) and PBGC Technical Update 10-3, the impact of reducing adjustable benefits is reflected by adding the unamortized portion of the value of affected benefits (VAB) to the most recent year's unfunded vested benefits pool. An employer who is assessed withdrawal liability will be assessed a portion of the UVB and the VAB.

Presumptive Method ($ 000)

April 30,	2018	2017	2016	2015	2014
Vested benefits interest	7.50%	7.50%	7.50%	7.50%	7.50%
Vested benefits	2,205,042	2,185,387	2,089,265	1,986,840	1,883,082
less: Asset value*	771,737	781,239	821,814	859,594	883,024
UVB	1,433,305	1,404,148	1,267,451	1,127,246	1,000,058
Unamortized VAB	200,929	212,515	223,293	233,318	242,642
UVB + VAB	1,634,234	1,616,663	1,490,744	1,360,564	1,242,700



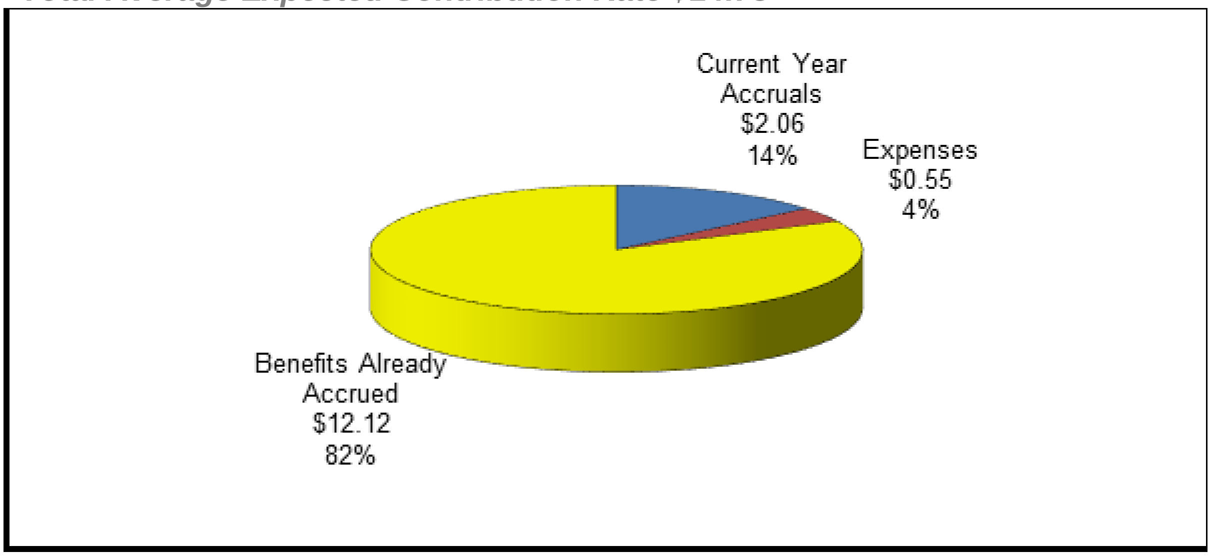
* Actuarial value
** Includes VAB

CONTRIBUTION ALLOCATION

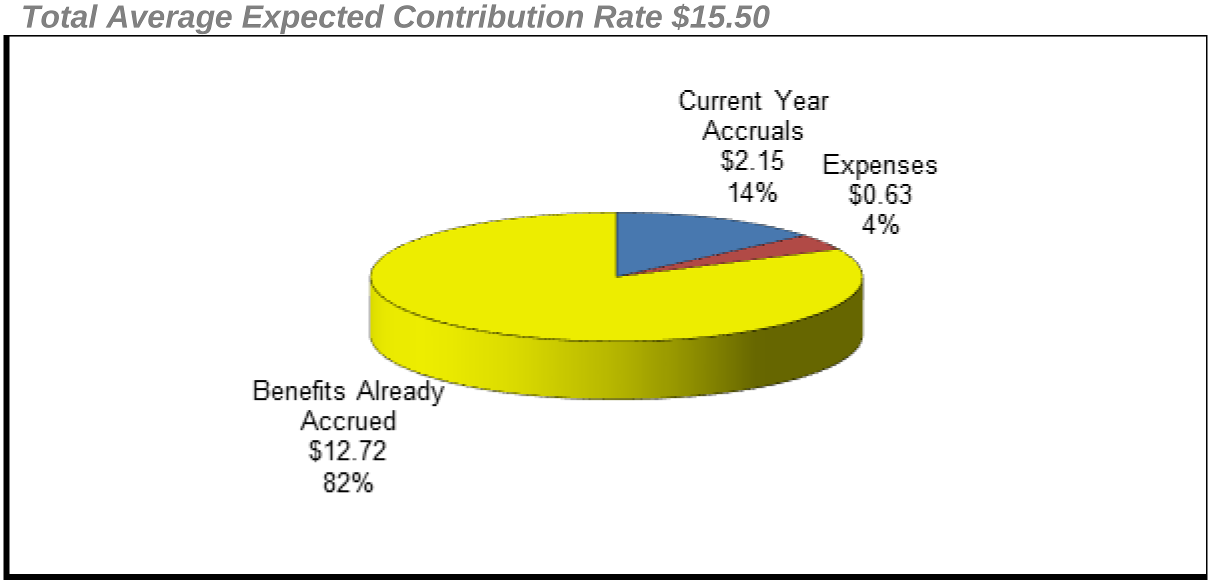
These graphs show how the contributions are being spent

The following allocation charts illustrate how the expected contribution rate for the coming plan year will be "spent" to pay for benefits being earned in the current year, plan expenses, and funding of past unfunded liabilities.

Contribution Allocation as of May 1, 2018
Total Average Expected Contribution Rate $14.73



Contribution Allocation as of May 1, 2017
Total Average Expected Contribution Rate $15.50

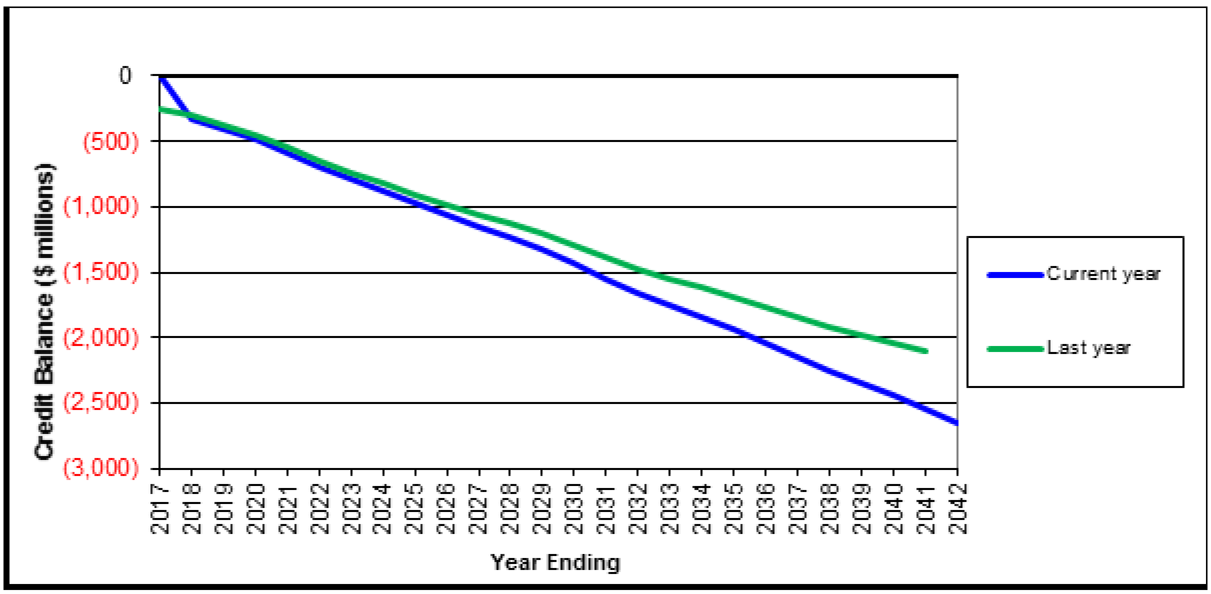


FUNDING STANDARD ACCOUNT PROJECTION

The funding standard account projection is a major driver of PPA status

The funding standard account (FSA) was established by ERISA as a means of determining compliance with minimum funding standards. The FSA is hypothetical in the sense that it does not represent actual assets held by a custodian. Rather, a positive FSA balance (called a "credit balance") means that the plan has exceeded minimum funding standards on a cumulative basis, while a negative balance (called a "funding deficiency") means that the plan has fallen short of such standards.

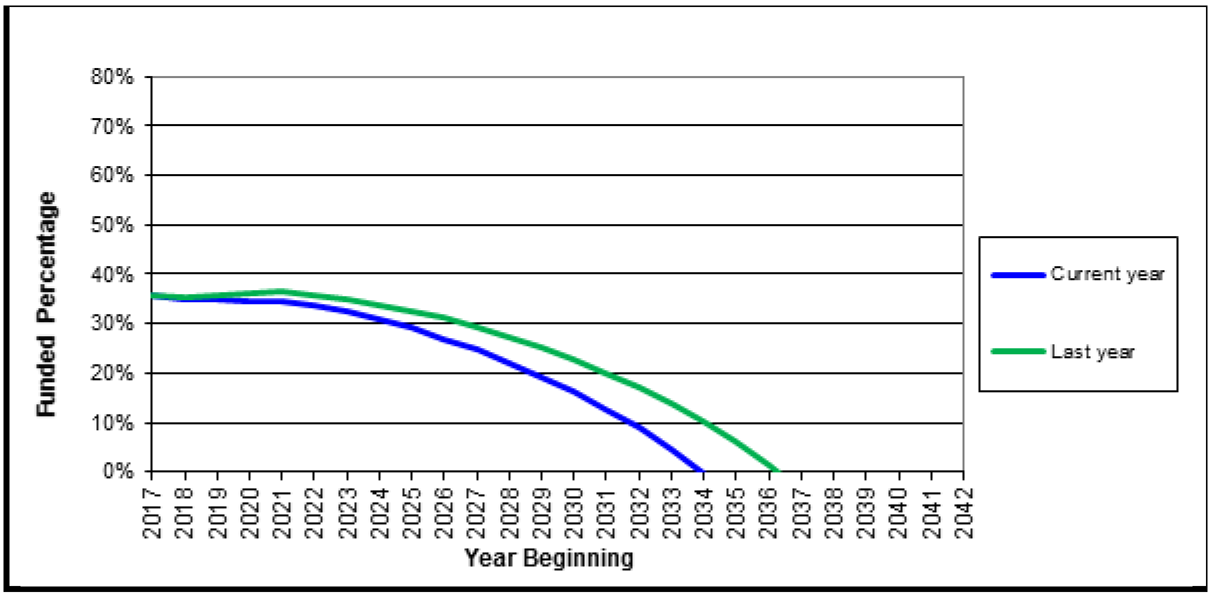
Actuaries must project the plan's FSA each year in order to determine PPA status. If a funding deficiency is projected in a future year, the plan could be forced into yellow (endangered) or red (critical) status depending how far into the future the projected funding deficiency is. The plan's FSA projection appears below. These projections are based on the assumptions summarized in the "Actuarial Assumptions used for Projections" section of Appendix B.



FUNDED RATIO PROJECTION

The plan's funded ratio is a major driver of PPA status

The funded ratio is defined as the actuarial value of plan assets divided by the plan's liabilities for accrued benefits. Along with the funding standard account projection, funded ratio is one of the two major drivers of PPA funded status. In order for a plan to enter the green zone (also called "safe" or "not endangered or critical") the funded ratio must be at least 80%. The projection of the funded ratio appears below. These projections are based on the assumptions summarized in the "Actuarial Assumptions used for Projections" section of Appendix B.



PPA FUNDING STATUS REPORT

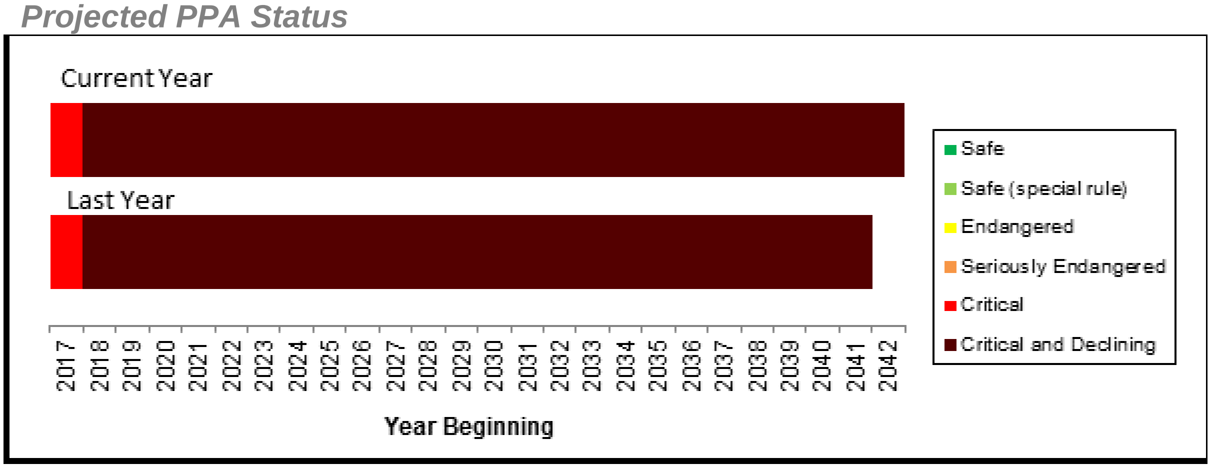
The plan is in Critical and Declining status for 2018

The Pension Protection Act of 2006 (PPA), as amended by the Multiemployer Pension Reform Act of 2014 ("MPRA"), requires all multiemployer pension plans to obtain an annual status certification. The possible statuses are: "Safe", "Endangered", "Seriously Endangered", "Critical" or "Critical and Declining". As the plan's actuary, we must complete the status certification within 90 days of the beginning of the plan year, and we must also certify whether or not the plan has made scheduled progress if its funding improvement or rehabilitation period has begun. The criteria for these determinations are outlined in Appendix D. Due to the timing requirement affecting PPA certifications, they are performed based on data and assumptions different from that used in this report (see certification letter for additional details). These projections are based on the assumptions summarized in the "Actuarial Assumptions used for Projections" section of Appendix B. The results are summarized below.

	Values Used for PPA Certification	
Description	**2018**	**2017**
Funded ratio	34.5%	36.4%
Date of first projected funding deficiency		
With extensions	Existing	Existing
Without extensions	Existing	Existing
Year of projected insolvency (PYB)	2035	2051
Certified PPA status	Critical & Declining	Critical
Making progress under FIP/RP	Yes *	Yes *

* Scheduled progress for this Plan means using all reasonable measures to forestall insolvency.

Projected PPA Status

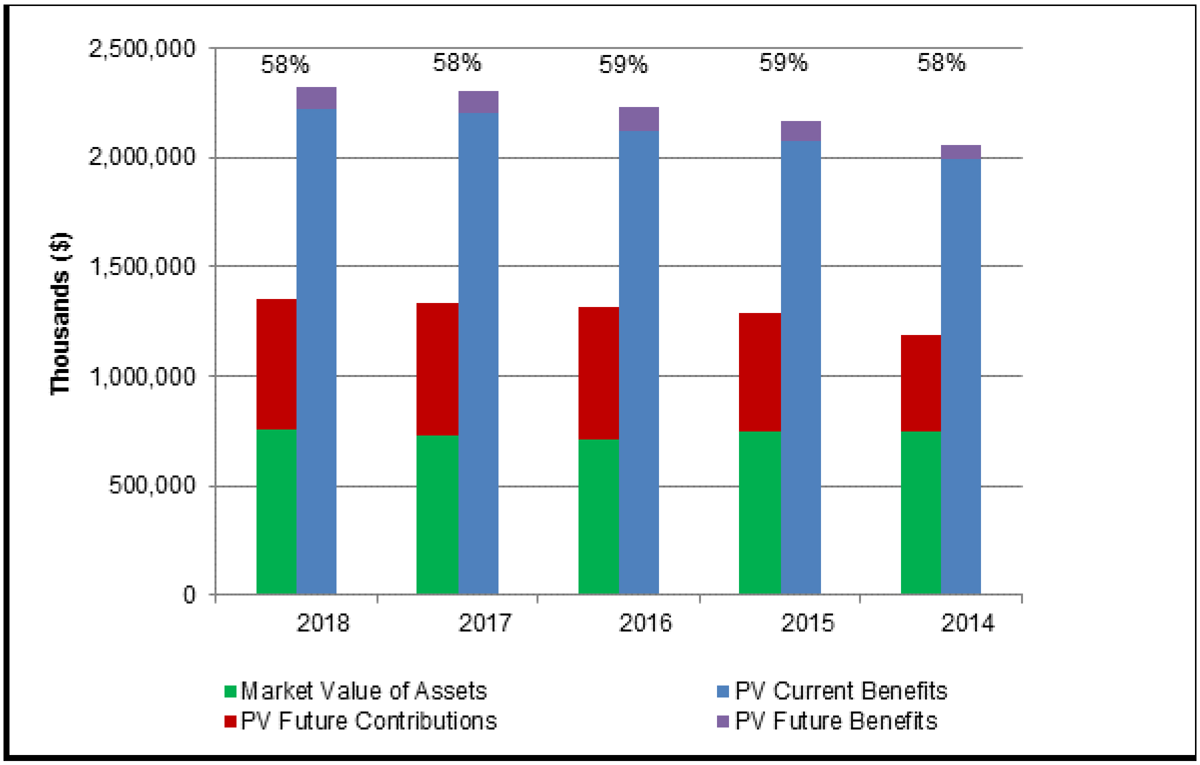


ULTIMATE FUNDED STATUS

Ultimate funded status is a snapshot measure of contribution sufficiency

An actuarial valuation deals primarily with the ability of the plan to meet Internal Revenue Code requirements now and in the near future. As such, it is heavily focused on current plan assets and liabilities. But it is also important to keep in mind the true purpose of the plan funding—that is, to accumulate sufficient assets to pay the benefits that the plan has promised to its participants. The chart below looks at this long-term funding adequacy. To the current plan assets we add the present value of all future contributions expected to be made for the current plan participants. To the value of the plan's liabilities for benefits that have been previously earned we add the present value of all the future benefits the current plan participants are expected to earn through their future service. Ideally these ultimate asset and liability values will be approximately equal.

Neither of these amounts reflect the effect of future new participants or future contribution rate increases to the plan. Generally new entrants generate greater future contributions than benefits, so they represent a net positive to the actual future funding shown here.



STRESS AND SENSITIVITY ANALYSIS

The table below illustrates the impact on the plan when experience varies from key assumptions

Currently, the plan is in critical and declining status and projects a 2034 date of insolvency. Considering that experience rarely matches our assumptions exactly, we developed the table below to demonstrate the impact that variations in certain key assumptions would have on the date of projected insolvency. We examined future hours assumptions equal to the baseline, 10% lower, and 10% higher. We examined asset returns for the 2018-19 plan year of 6.20%, 4.00%, 0.00%, and -4.00%. All results included the impact of a lower asset return of 6.20% for the next 9 years and 7.50% thereafter. Stochastic modeling is also available for a more detailed analysis of sensitivity to asset returns.

	Return for the 2018-19 PY (6.20% next 9 yrs, 7.50% thereafter)			
Hours Assumption	*6.20%*	*4.00%*	*0.00%*	*-4.00%*
<u>10% Lower</u> 7,560,000 in 2018-19 7,380,000 in 2019-20 7,200,000 in 2020-21 6,570,000 in 2021-22 6,300,000 thereafter	Insolvency year: 2032	Insolvency year: 2032	Insolvency year: 2031	Insolvency year: 2031
<u>Baseline</u> 8,400,000 in 2018-19 8,200,000 in 2019-20 8,000,000 in 2020-21 7,300,000 in 2021-22 7,000,000 thereafter	**Insolvency year: 2034**	Insolvency year: 2034	Insolvency year: 2033	Insolvency year: 2033
<u>10% Higher</u> 9,240,000 in 2018-19 9,020,000 in 2019-20 8,800,000 in 2020-21 8,030,000 in 2021-22 7,700,000 thereafter	Insolvency year: 2038	Insolvency year: 2038	Insolvency year: 2037	Insolvency year: 2036

PART II: SUPPLEMENTAL STATISTICS

PARTICIPANT DATA RECONCILIATION

The participant data reconciliation table below provides information as to how the plan's covered population changed since the prior actuarial study. Such factors as the number of participants retiring, withdrawing and returning to work have an impact on the actuarial position of the pension fund.

Participants Valued As	Active	Inactive Vested	Receiving Benefits	Total Valued
May 1, 2017	5,208	6,465	7,314	18,987
Change due to:				
New hire	1,117	-	-	1,117
Rehire	356	(136)	-	220
Termination	(759)	213	-	(546)
Disablement	(6)	(5)	11	-
Retirement	(97)	(153)	250	-
Death	(12)	(43)	(301)	(356)
Cash out	-	(6)	-	(6)
New beneficiary	-	43	126	169
Certain pd. expired	-	-	(3)	(3)
Data adjustment	(4)*	60**	(2)***	54
Net change	595	(27)	81	649
May 1, 2018	5,803	6,438	7,395	19,636

* Comprised primarily of actives that were removed due to reciprocity out.
** Comprised primarily of records previously assumed deceased because they were over age 70.
*** Comprised primarily of duplicate records that were removed.

Hours Worked During Plan Year

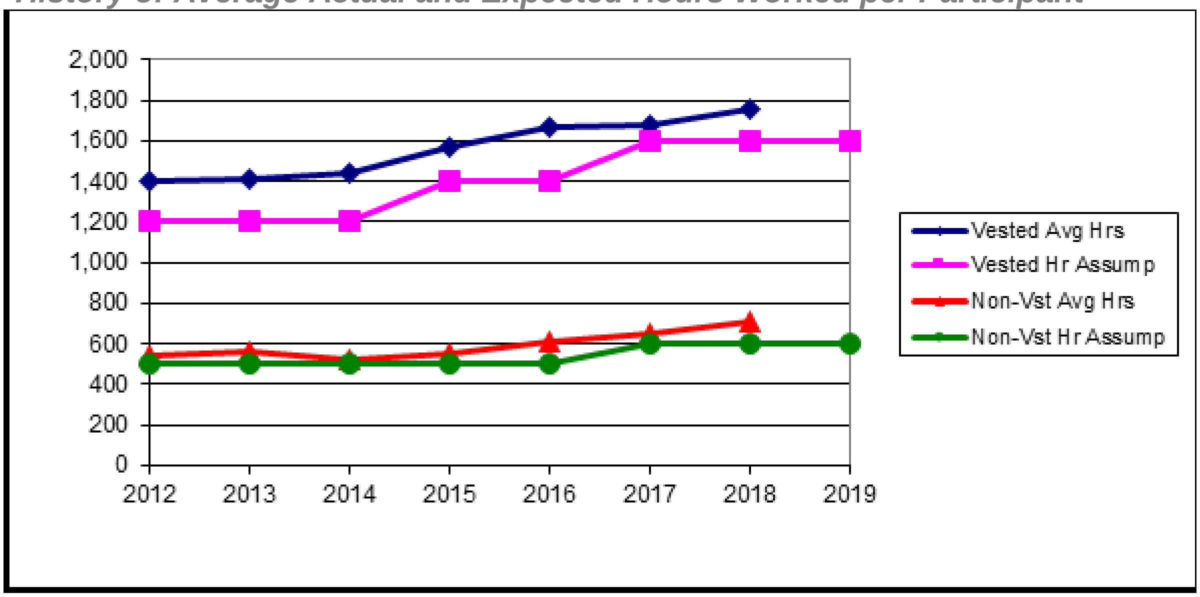
Hours Worked Per Participant

Plan Year Ending April 30, 2018	Number	Hours Worked	Average Hours Worked
Actives			
Vested	3,780	6,636,384	1,756
Non-vested, continuing	539	737,605	1,368
Non-vested, new entrant	1,484	701,981	473
Total active	5,803	8,075,970	1,392
Others	135	108,627	805
Total for plan year	5,938	8,184,597	1,378

History of Total Actual and Expected Hours Worked (Thousands)

Plan Year Ending April 30,	2019	2018	2017	2016	2015
Expected hours valuation	7,249	6,825	6,908	5,983	5,953
Expected hours PPA cert	8,500	7,500	8,500	8,000	7,500
Actual hours worked	n/a	8,185	7,266	7,306	6,772

History of Average Actual and Expected Hours Worked per Participant



CONTRIBUTIONS MADE DURING PLAN YEAR

Employer Credited Contributions Reported in Employee Data

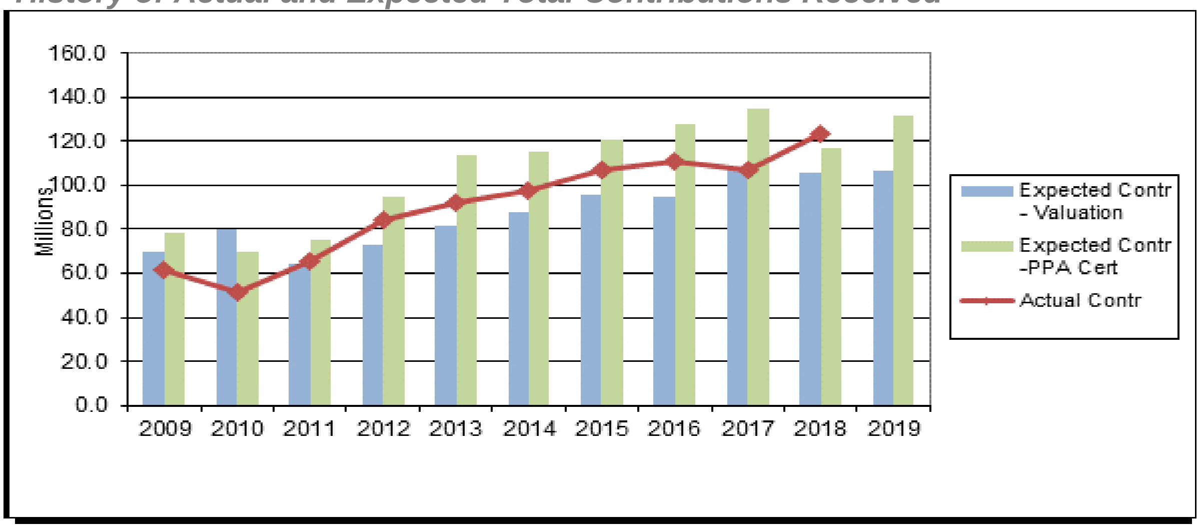
Plan Year Ending April 30, 2018	*Number*	*Credited Contributions Reported*
Actives		
Vested	3,780	$ 39,553,421
Non-vested, continuing	539	3,208,416
Non-vested, new entrant	1,484	3,311,083
Total valued as active	5,803	46,072,920
Others	135	618,340
Total for plan year	5,938	$ 46,691,260
Average credited hourly contribution rate		$ 5.70

Comparison with Audited Employer Contributions

Employer credited contributions reported in data	$	46,691,260
Adjusted total employer contributions reported*	$	119,721,179
Total audited employer contributions	$	123,147,221
Percent reported		97%

* Adjusted to reflect the 61% discounted portion of contributions that are not credited for benefit accrual purposes.

*History of Actual and Expected Total Contributions Received***



** The 2018 PPA cert expected contributions of 131,733,986 in the 2019 column is different than the 123,737,217 expected contributions used in the 2018 valuation projections. Likewise, the 2017 PPA cert expected contributions of 116,648,009 in the 2018 column is different than the 142,582,667 expected contributions used in the 2017 valuation projections and the 2016 PPA cert expected contributions of 134,697,603 in the 2017 column is different than the 113,537,396 expected contributions used in the 2016 valuation projections.

ACTIVE INFORMATION

Active Participants by Age and Service as of May 1, 2018

Age	Years of Service										
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 25	195	314	15	-	-	-	-	-	-	-	524
25-29	134	300	128	19	-	-	-	-	-	-	581
30-34	115	253	120	128	17	-	-	-	-	-	633
35-39	132	226	117	154	133	23	-	-	-	-	785
40-44	111	152	88	120	186	146	4	-	-	-	807
45-49	81	107	86	117	187	170	62	14	-	-	824
50-54	80	89	67	87	173	166	104	137	3	-	906
55-59	50	53	28	65	103	105	70	66	2	-	542
60-64	20	12	22	20	31	38	18	3	-	-	164
65-69	2	1	1	-	3	2	-	-	-	-	9
70+	2	-	1	-	-	-	-	-	-	-	3
Totals	922	1,507	673	710	833	650	258	220	5	-	5,778
Unrecorded DOB	23	2	-	-	-	-	-	-	-	-	25
Total Active Lives	945	1,509	673	710	833	650	258	220	5	-	5,803

INACTIVE VESTED INFORMATION

Inactive Vested Participants by Age as of May 1, 2018

Age Group	Number	Estimated Monthly Deferred Vested Benefits*
< 30	34	$ 2,172
30-34	179	36,829
35-39	614	262,128
40-44	958	546,951
45-49	1,119	755,320
50-54	1,243	912,643
55-59	1,198	790,944
60-64	798	429,141
65-69	206	63,593
70+	87	42,655
Totals	6,436	3,842,376
Unrecorded birth date	2	225
Total inactive vested lives	6,438	$ 3,842,601

* Amount payable at assumed retirement age as used in the valuation process.

RETIREE INFORMATION

Benefits Being Paid by Form of Payment as of May 1, 2018

Form of Payment	Number	Monthly Benefits Being Paid: Total	Average	Smallest	Largest
Life only*	2,293	$ 4,055,957	$ 1,769	$ 32	$ 8,038
Joint & survivor	2,969	6,258,276	2,108	25	8,846
Disability	484	734,349	1,517	193	4,916
Beneficiaries	1,649	1,383,810	839	11	6,584
Totals	7,395	$ 12,432,392	$ 1,681	$ 11	$ 8,846

Retirees by Age and Form of Payment as of May 1, 2018

Age Group	Form of Benefits Being Paid: Life Only*	Joint & Survivor	Disability	Beneficiaries	Total
< 40	-	-	9	8	17
40-44	-	-	21	2	23
45-49	-	-	49	10	59
50-54	-	-	106	55	161
55-59	162	228	221	107	718
60-64	396	568	78	169	1,211
65-69	502	746	-	195	1,443
70-74	418	570	-	206	1,194
75-79	331	441	-	227	999
80-84	235	232	-	257	724
85-89	147	138	-	243	528
90-94	79	41	-	133	253
95+	23	5	-	37	65
Totals	2,293	2,969	484	1,649	7,395

* Includes retirees receiving life and certain benefits.

RETIREE INFORMATION (CONT.)

Age of Participants Retired During Last 5 Plan Years
(excludes beneficiaries and disability retirements)

Age at Retirement	Plan Year Ending April 30, 2018	2017	2016	2015	2014
< 52	-	-	-	-	-
52	-	-	1	-	-
53	-	-	1	-	1
54	-	-	-	-	1
55	36	33	54	20	30
56	11	13	23	15	10
57	8	10	12	4	6
58	14	10	13	5	8
59	13	7	3	10	7
60	11	8	8	5	8
61	8	5	8	1	4
62	31	27	19	12	42
63	11	5	7	3	15
64	6	4	5	2	1
65	63	43	30	28	11
66+	20	15	11	8	8
Totals	232	180	195	113	152
Average retirement age	61.5	61.1	59.7	60.7	60.3

PART III: ASSET INFORMATION

MARKET AND ACTUARIAL FUND VALUES

Asset information extracted from the fund's financial statements audited by Bultynck & Co., P.L.L.C.

Market/Actuarial Value of Fund Investments as of April 30,	***2018***	***2017***	***2016***
Invested assets			
Domestic common stocks	$ 87,971,144	$ 80,476,728	$ 73,147,576
Foreign common stocks	17,181,416	4,116,213	2,894,880
Mutual funds	215,928,174	220,011,130	216,298,321
Corporate securities	23,682,219	6,194,578	-
Government securities	16,790,217	2,745,741	-
Mortgage-backed corp. secur.	3,844,721	271,648	3
Mortgage-backed GSE secur.	-	229,070	-
Real estate investment trusts	2,495,519	2,509,454	2,456,837
Common/collective trusts	7,580,600	8,915,967	9,361,635
Hedge funds	51,799,260	64,019,094	61,305,433
Private equity	122,674,338	143,080,092	134,860,103
Real estate	173,111,462	166,638,915	170,679,611
Cash	18,390,720	19,323,106	11,217,834
Cash equivalents	10,323,446	7,227,063	15,686,707
Prepaid expenses	684,544	684,481	9,043,907
	752,457,780	726,443,280	706,952,847
Net receivables*	9,271,229	7,796,517	5,707,381
Market value	$ 761,729,009	$ 734,239,795	$ 712,660,227
Fund assets - Actuarial value			
Market value	$ 761,729,009	$ 734,239,795	$ 712,660,227
less*: Deferred investment gains and (losses)*	(10,007,780)	(46,999,149)	(109,153,386)
Actuarial value	$ 771,736,789	$ 781,238,944	$ 821,813,613
Actuarial value as a percentage of market value	101.31%	106.40%	115.32%

* Equals receivables, less any liabilities

FLOW OF FUNDS

Asset information extracted from the fund's financial statements audited by Bultynck & Co., P.L.L.C.

Plan Year Ending April 30,	2018	2017	2016
Market value at beginning of plan year	$ 734,239,795	$ 712,660,227	$ 746,438,678
Additions			
Employer contributions	123,147,221	106,706,279	111,258,164
*Net investment income**	56,604,709	76,301,511	(1,590,827)
Other income	127,168	97,527	56,937
	179,879,098	183,105,317	109,724,274
Deductions			
Benefits paid	148,373,816	157,611,626	139,232,507
*Net expenses**	4,016,068	3,914,123	4,270,218
	152,389,884	161,525,749	143,502,725
Net increase (decrease)	27,489,214	21,579,568	(33,778,451)
Adjustment	-	-	-
Market value at end of plan year	$ 761,729,009	$ 734,239,795	$ 712,660,227
Cash flow			
Contr.-ben.-exp.	(29,242,663)	(54,819,470)	(32,244,561)
Percent of assets	-3.84%	-7.47%	-4.52%
Estimated net investment return			
On market value	7.87%	11.13%	-0.22%
On actuarial value	2.56%	1.78%	-0.66%

* Investment expenses have been offset against gross investment income.

INVESTMENT GAIN AND LOSS

Investment Gain or Loss
Plan Year Ending April 30, 2018

Expected market value at end of plan year		
Market value at beginning of plan year	$	734,239,795
Employer contributions and non-investment income		123,274,389
Benefits and expenses paid		(152,389,884)
Expected investment income (at 7.50% rate of return)		53,976,154
		759,100,454
Actual market value at end of plan year		761,729,009
less: Expected market value		759,100,454
Investment gain or (loss)	$	2,628,555

History of Gains and (Losses)

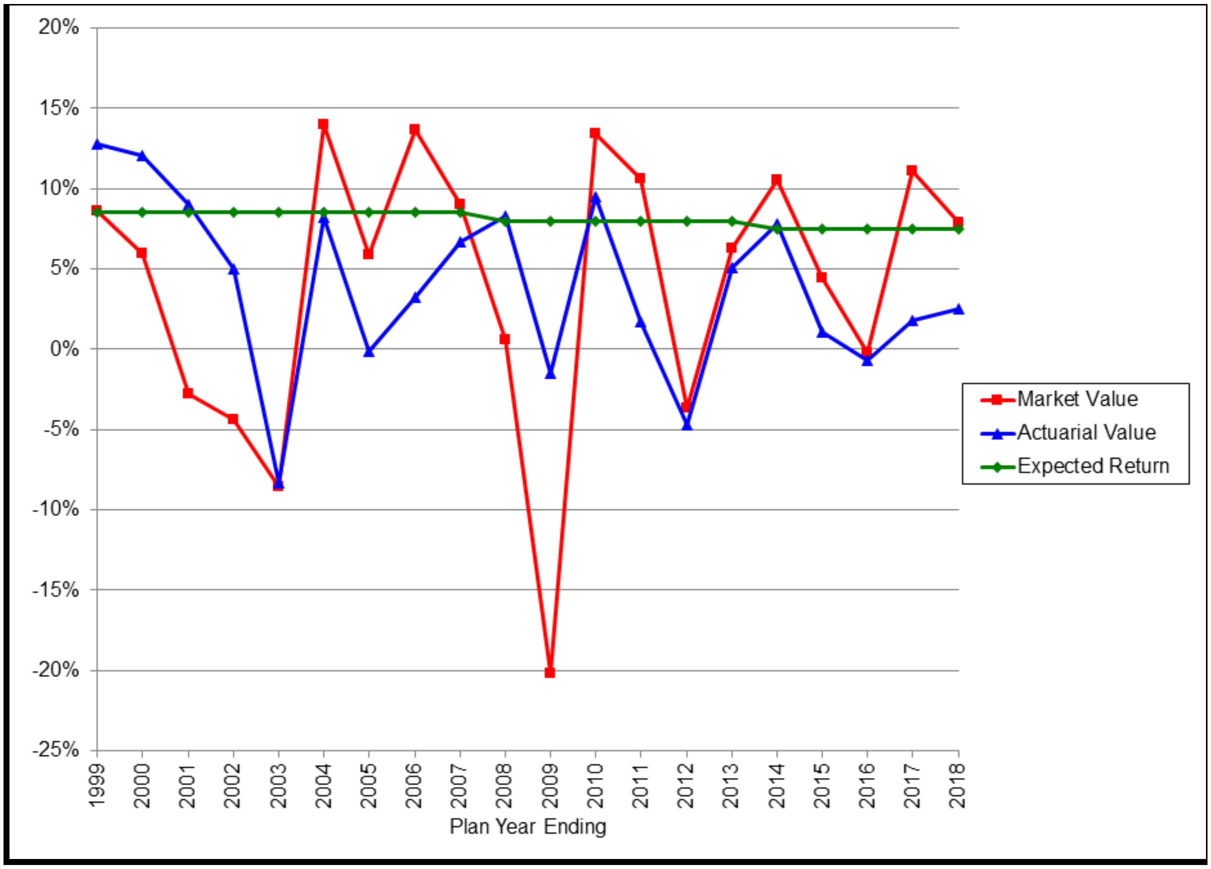
Plan Year Ending April 30,	Investment Gain or (Loss)
2018	$ 2,628,555
2017	24,904,067
2016	(56,366,691)
2015	(22,531,938)
2014	20,961,778
2009	(282,819,686)

Deferred Investment Gains and (Losses)

Plan Year Ending April 30,	Amount of Gain or (Loss) Deferred as of April 30, 2018	2019	2020	2021
2018	$ 2,102,844	$ 1,577,133	$ 1,051,422	$ 525,711
2017	14,942,440	9,961,627	4,980,813	-
2016	(22,546,676)	(11,273,338)	-	-
2015	(4,506,388)	-	-	-
Totals	$ (10,007,780)	$ 265,422	$ 6,032,235	$ 525,711

RATE OF RETURN ON FUND ASSETS

Historical Rates of Net Investment Return



Average Rates of Net Investment Return (dollar weighted)

Period	Return on Market Value Period Ending April 30, 2018	Return on Market Value Period Ending April 30, 2017	Return on Actuarial Value Period Ending April 30, 2018	Return on Actuarial Value Period Ending April 30, 2017
One year	7.87%	11.13%	2.56%	1.78%
5 years	6.64%	6.36%	2.56%	3.11%
10 years	2.67%	2.02%	2.19%	2.93%
15 years	5.37%	3.80%	3.47%	2.32%
20 years	3.36%	4.49%	4.35%	4.95%

PART IV: ENROLLED ACTUARY'S REPORT

NORMAL COST/ACTUARIAL LIABILITY

Normal Cost as of May 1,	*2018*	*2017*
Active participants	$ 14,376,040	$ 14,111,595
Anticipated administrative expenses (beg. of year)	3,855,422	4,144,578
Total normal cost	$ 18,231,462	$ 18,256,173

Unfunded Actuarial Liability as of May 1,	*2018*	*2017*
Actuarial liability		
Participants currently receiving benefits	$ 1,486,101,209	$ 1,472,456,622
Inactive vested participants	289,394,861	282,361,270
Active participants	442,391,581	444,225,288
	2,217,887,651	2,199,043,180
less: Fund assets (actuarial value)	771,736,789	781,238,944
Unfunded actuarial liability (not less than 0)	$ 1,446,150,862	$ 1,417,804,236

ACTUARIAL LIABILITY RECONCILIATION/PROJECTION

Reconciliation of Unfunded Actuarial Liability

Expected unfunded actuarial liability as of April 30, 2018		
Unfunded actuarial liability as of May 1, 2017	$	1,417,804,236
Normal cost (including expenses)		18,256,173
Actual contributions		(123,147,221)
Interest to end of plan year		103,086,512
		1,415,999,700
Increase (decrease) due to:		
Experience (gain) or loss		49,896,267
Plan amendment		-
Change in actuarial assumptions		(19,745,105)
Change in actuarial method		-
Net increase (decrease)		30,151,162
Unfunded actuarial liability as of May 1, 2018	$	1,446,150,862

Projection of Actuarial Liability to Year End

Actuarial liability as of May 1, 2018	$	2,217,887,651
Expected increase (decrease) due to:		
Normal cost (excluding expenses)		14,376,040
Benefits paid		(156,614,181)
Interest on above		(4,794,829)
Interest on actuarial liability		166,341,574
Net expected increase (decrease)		19,308,604
Expected actuarial liability as of April 30, 2019	$	2,237,196,255

FUNDED RATIOS

Present Value of Accumulated Benefits/ Funded Ratios Actuarial Study as of May 1,		*2018*		*2017*
Present value of vested accumulated benefits				
Participants currently receiving benefits	$	1,486,101,209	$	1,472,456,622
Inactive vested participants		287,640,501		279,647,779
Active participants		431,300,579		433,282,347
Total		2,205,042,289		2,185,386,748
Nonvested accumulated benefits		12,845,362		13,656,432
Present value of all accumulated benefits	$	2,217,887,651	$	2,199,043,180
Market value of assets	$	761,729,009	$	734,239,795
Funded ratios (Market value)				
Vested benefits		34.5%		33.6%
All accumulated benefits		34.3%		33.4%
Actuarial value of assets	$	771,736,789	$	781,238,944
Funded ratios (Actuarial value used for PPA)				
Vested benefits		35.0%		35.7%
All accumulated benefits		34.8%		35.5%
Interest rate used to value benefits		7.50%		7.50%

FUNDING PERIOD

The funding period is the approximate number of years that would be required to completely fund the unfunded entry age normal actuarial liability if future plan experience occurs according to the assumptions. The funding period is an indicator of the long term financial soundness of the plan. Historically, funds often targeted a maximum funding period of up to 20 years. Today, asset losses are being paid off over a maximum of 15 years and are the primary driver for ERISA minimum funding. An ultimate target of no more than 10 years is recommended. A lower, more conservative funding period target can be chosen. As the funding period drops, the risk of having future funding issues also diminishes.

Funding Period Calculation *Actuarial Study as of May 1,*		*2018*		*2017*
Unfunded actuarial liability				
Actuarial liability	$	2,301,227,465	$	2,290,411,786
less: *Fund assets (actuarial value)*		771,736,789		781,238,944
		1,529,490,676		1,509,172,842
Funds available to amortize unfunded				
Anticipated contributions (beg. of yr.)		102,922,672		101,948,474
less: *Normal cost (including expenses)*		8,114,992		6,695,686
	$	94,807,680	$	95,252,788
Funding period (years)		*		*

* Anticipated contributions are insufficient to pay normal cost and amortize unfunded liability.

CURRENT LIABILITY

Current Liability as of May 1, 2018

Vested current liability		
Participants currently receiving benefits	$	2,319,183,732
Inactive vested participants		631,597,770
Active participants		1,002,743,538
		3,953,525,040
Nonvested current liability		
Inactive vested participants		2,337,109
Active participants		21,647,891
		23,985,000
Total current liability	$	3,977,510,040

Projection of Current Liability to Year End

Current liability as of May 1, 2018	$	3,977,510,040
Expected increase (decrease) due to:		
Benefits accruing		37,383,894
Benefits paid		(156,614,181)
Interest on above		(1,223,604)
Interest on current liability		118,927,550
Net expected increase (decrease)		(1,526,341)
Expected current liability as of April 30, 2019	$	3,975,983,699

FUNDING STANDARD ACCOUNT

Funding Standard Account Plan Year Ending April 30,	2019 (Projected)	2018 (Final)
Charges		
Prior year funding deficiency	$ 327,315,629	$ 258,325,344
Normal cost (including expenses)	18,231,462	18,256,173
Amortization charges (see Appendix C)	218,273,664	215,348,678
Interest on above	42,286,556	36,894,765
Total charges	606,107,311	528,824,960
Credits		
Prior year credit balance	-	-
Employer contributions	147,306,211	123,147,221
Amortization credits (see Appendix C)	70,679,954	68,599,149
Interest on above	10,824,983	9,762,961
ERISA full funding credit	-	-
Total credits	228,811,148	201,509,331
Credit balance (credits less charges)	$ (377,296,163)	$ (327,315,629)

FUNDING STANDARD ACCOUNT WITHOUT AMORTIZATION EXTENSION

The Funding Standard Account on the previous page has been developed using an amortization extension approved by the IRS under §412(e) or §431(d) of the Code. We are required to report the dollar difference between the minimum required contribution with extension and without extension on the Schedule MB.

Funding Standard Account *Plan Year Ending April 30,*	*2019* *(Projected)*	*2018* *(Final)*
Charges		
Prior year funding deficiency	$ 636,739,149	$ 555,150,077
Normal cost (including expenses)	18,231,462	18,256,173
Amortization charges (see Appendix C)	183,161,351	206,359,778
Interest on above	62,859,897	58,482,453
Total charges	900,991,859	838,248,481
Credits		
Prior year credit balance	-	-
Employer contributions	147,306,211	123,147,221
Amortization credits (see Appendix C)	70,679,954	68,599,149
Interest on above	10,824,983	9,762,962
ERISA full funding credit	-	-
Total credits	228,811,148	201,509,332
Credit balance (credits less charges)	$ (672,180,711)	$ (636,739,149)

FULL FUNDING LIMIT

Projection of Assets for Full Funding Limit		*Market Value*		*Actuarial Value*
Asset value as of May 1, 2018	$	761,729,009	$	771,736,789
Expected increase (decrease) due to:				
Investment income		51,106,644		51,857,227
Benefits paid		(156,614,181)		(156,614,181)
Expenses		(4,000,000)		(4,000,000)
Net expected increase (decrease)		(109,507,537)		(108,756,954)
Expected value as of April 30, 2019*	$	652,221,472	$	662,979,835

* Ignoring expected employer contributions (as required by regulation).

Full Funding Limit as of April 30, 2019		*For Minimum Required*		*For Maximum Deductible*
ERISA full funding limit (not less than 0)				
Actuarial liability	$	2,237,196,255	$	2,237,196,255
less: *Assets (lesser of market or actuarial)*		652,221,472		652,221,472
plus: *Credit balance (w/interest to year end)*		-		n/a
		1,584,974,783		1,584,974,783
ERISA full funding limit without extension (not less than 0)				
Actuarial liability		2,237,196,255		n/a
less: *Assets (lesser of market or actuarial)*		652,221,472		n/a
plus: *Credit bal. w/o ext. (w/int. to year end)*		-		n/a
		1,584,974,783		n/a
Full funding limit override (not less than 0)				
90% of current liability		3,578,385,329		3,578,385,329
less: *Assets (actuarial value)*		662,979,835		662,979,835
		2,915,405,494		2,915,405,494
Full funding limit (greater of ERISA limit and full funding override)				
With amortization extension	$	2,915,405,494	$	2,915,405,494
Without amortization extension	$	2,915,405,494		n/a

MINIMUM REQUIRED CONTRIBUTION AND FULL FUNDING CREDIT

Minimum Required Contribution Plan Year Beginning May 1, 2018	*Without Extension*	*With Extension*
Minimum funding cost		
Normal cost (including expenses)	$ 18,231,462	$ 18,231,462
Net amortization of unfunded liabilities	112,481,397	147,593,710
Interest to end of plan year	9,803,461	12,436,884
	140,516,320	178,262,056
Full funding limit	2,915,405,494	2,915,405,494
Net charge to funding std. acct. (lesser of above)	140,516,320	178,262,056
less: *Credit balance with interest to year end*	(684,494,585)	(351,864,301)
Minimum Required Contribution (not less than 0)*	$ 825,010,905	$ 530,126,357
Effect of extension		$ 294,884,548

* Excise taxes that would otherwise apply in the case of a negative credit balance are waived if the provisions of the rehabilitation plan are followed and the plan continues to make scheduled progress

Full Funding Credit to Funding Standard Account Plan Year Ending April 30, 2019	*Without Extension*	*With Extension*
Full funding credit (not less than 0)		
Minimum funding cost (n.c., amort., int.)	$ 140,516,320	$ 178,262,056
less: *full funding limit*	2,915,405,494	2,915,405,494
	$ -	$ -

MAXIMUM DEDUCTIBLE CONTRIBUTION

The maximum amount of tax-deductible employer contributions made to a pension plan is determined in accordance with Section 404(a) of the Internal Revenue Code. For a multiemployer pension plan, Section 413(b)(7) of the Internal Revenue Code and IRS Announcement 98-1 provide that, if anticipated employer contributions are less than the deductible limit for a plan year, then all employer contributions paid during the year are guaranteed to be deductible. If anticipated employer contributions exceed the deductible limit, the Trustees have two years from the close of the plan year in question to retroactively improve benefits to alleviate the problem.

Maximum Deductible Contribution
Plan Year Beginning May 1, 2018

Preliminary deductible limit		
Normal cost (including expenses)	$	18,231,462
10-year limit adjustment (using "fresh start" alternative)		195,984,958
Interest to end of plan year		16,066,232
		230,282,652
Full funding limit		2,915,405,494
Maximum deductible contribution override		
140% of vested current liability projected to April 30, 2019		5,532,811,064
less*: Actuarial value of assets projected to April 30, 2019*		662,979,835
		4,869,831,229
Maximum deductible contribution*	$	4,869,831,229
Anticipated employer contributions	$	106,782,272

* Equals the lesser of the preliminary deductible limit and the full funding limit, but not less than the maximum deductible contribution override.

HISTORY OF UNFUNDED VESTED BENEFITS

Presumptive Method

April 30,	Vested Benefits Interest Rate	Value of Vested Benefits	Asset Value*	Unfunded Vested Benefits	Unamortized Portion of VAB
1999	8.50%	850,699,898	1,012,396,059	(161,696,161)	
2000	8.50%	938,572,993	1,111,005,014	(172,432,021)	
2001	8.50%	1,029,784,599	1,179,424,453	(149,639,854)	
2002	8.50%	1,107,078,442	1,199,112,035	(92,033,593)	
2003	8.50%	1,184,327,138	1,096,149,080	88,178,058	
2004	8.50%	1,275,453,703	1,135,029,517	140,424,186	
2005	8.50%	1,362,988,818	1,078,562,590	284,426,228	
2006	8.50%	1,443,959,383	1,050,435,719	393,523,664	
2007	8.00%	1,611,741,457	1,050,682,726	561,058,731	
2008	8.00%	1,694,967,827	1,080,411,426	614,556,401	
2009	8.00%	1,777,493,533	925,248,368	852,245,165	
2010	8.00%	1,784,003,335	1,016,672,140	767,331,195	
2011	8.00%	1,868,338,612	967,427,492	900,911,120	2,737,290
2012	8.00%	1,932,955,484	869,984,478	1,062,971,006	2,636,477
2013	7.50%	2,081,917,679	861,607,040	1,220,310,639	2,527,599
2014	7.50%	1,883,082,305	883,023,972	1,000,058,333	242,642,462
2015	7.50%	1,986,839,845	859,593,662	1,127,246,183	233,317,630
2016	7.50%	2,089,265,487	821,813,612	1,267,451,875	223,292,801
2017	7.50%	2,185,386,748	781,238,944	1,404,147,804	212,515,423
2018	7.50%	2,205,042,289	771,736,789	1,433,305,500	200,929,002

* Actuarial value

TERMINATION BY MASS WITHDRAWAL

If all employers were to cease to have an obligation to contribute to the plan, the plan would be considered "terminated due to mass withdrawal." In this event, the Trustees would have the option of distributing plan assets in satisfaction of all plan liabilities through the purchase of annuities from insurance carriers or payment of lump sums. If assets are insufficient to cover liabilities, a special actuarial valuation pursuant to Section 4281 of ERISA would be performed as of the end of the plan year in which the mass withdrawal occurred. If the Section 4281 valuation indicates the value of nonforfeitable benefits exceeds the value of plan assets, employer withdrawal liability would be assessed.

The ERISA Section 4281 valuation described above uses required actuarial assumptions that are typically more conservative than those used for valuing an on-going plan. In order to illustrate the impact of the mass withdrawal assumptions, we performed an illustrative Section 4281 valuation as if mass withdrawal had occurred during the prior plan year. The value of assets used below is market value without any adjustments for outstanding employer withdrawal liability claims.

As required by regulation, interest rates of 2.27% for the first 20 years and 2.59% for each year thereafter and the GAM 94 Basic Mortality Table projected to 2028 were used.

Illustrative Section 4281 Valuation as of April 30, 2018

Value of nonforfeitable benefits		
Participants currently receiving benefits	$	2,448,450,600
Inactive vested participants		705,825,820
Active participants		1,190,832,469
Expenses (per Section 4281 of ERISA)		24,257,815
		4,369,366,704
less: Fund assets (market value)		761,729,009
Value of nonforfeitable benefits in excess of (less than) fund assets	$	3,607,637,695

ASC 960 INFORMATION

The following displays are intended to assist the fund's auditor in complying with Accounting Standards Codification 960. The results shown are not necessarily indicative of the plan's potential liability upon termination.

Present Value of Accumulated Benefits *Actuarial Study as of May 1,*		*2018*		*2017**
Present value of vested accumulated benefits				
Participants currently receiving benefits	$	1,486,101,209	$	1,472,456,622
Expenses on parts. currently rec. benefits		40,867,783		40,492,557
Other participants		718,941,080		712,930,126
Expenses on other participants		19,770,880		19,605,578
		2,265,680,952		2,245,484,883
Present value of nonvested accumulated benefits				
Nonvested accumulated benefits		12,845,362		13,656,432
Expenses on nonvested benefits		353,247		375,552
		13,198,609		14,031,984
Present value of all accumulated benefits	$	2,278,879,561	$	2,259,516,867
Market value of plan assets	$	761,729,009	$	734,239,795
Interest rate used to value benefits		7.50%		7.50%

Changes in Present Value of Accumulated Benefits		
Present value of accumulated benefits as of May 1, 2017*	$	2,259,516,867
Increase (decrease) due to:		
Plan amendment		-
Change in actuarial assumptions		(20,288,096)
Benefits accumulated and experience gain or loss		22,576,909
Interest due to decrease in discount period		169,463,765
Benefits paid		(148,373,816)
Operational expenses paid		(4,016,068)
Net increase (decrease)		19,362,694
Present value of accumulated benefits as of May 1, 2018	$	2,278,879,561

* The 2017 present value of accumulated benefits (PVAB) column has been restated from the 2017 valuation to include an operational expense load of 2.75%. This change resulted in an increase of $60,473,687 to the 2017 PVAB.

APPENDICES

PLAN HISTORY

Origins/Purpose

The Carpenters Pension Trust Fund – Detroit and Vicinity Pension Plan was established effective May 1, 1957 as a result of collective bargaining agreements between the Carpenters' District Council of Detroit and Vicinity and various employer associations and other employers working within the jurisdiction of the Carpenters' District Council.

The Pension Plan is managed under the provisions of the Labor Management Relations Act by a Board of Trustees consisting of an equal number of representatives from Labor and from Management.

Effective May 1, 2002, the Interior Systems Local 1045 Resilient Pension Fund Pension Plan was merged with Carpenters Pension Trust Fund – Detroit and Vicinity Pension Plan.

Employer Contributions

The Pension Plan is financed entirely by contributions from the employers as specified in the applicable Collective Bargaining Agreements. Contributions began May 1, 1957 at the rate of 3% of wages. The rate has been increased through the years.

Reciprocity

The Trustees adopted a "Money Follows the Man" Reciprocity Agreement with other signatory funds within the Third District of the United Brotherhood of Carpenters and Joiners of America (AFL-CIO). Also, the Trustees became a party of the International's Reciprocal Agreement for Carpenters Pension Funds, which includes both the Pro-Rata and Money Follows the Man reciprocity types.

SUMMARY OF PLAN PROVISIONS

Plan year	The 12-month period beginning May 1 and ending the following April 30
Vesting/credit year	A participant shall accrue 1 vesting/credit year for each plan year on and after May 1, 1957, during which the participant is credited with 500 or more hours of service. 500 hours of service is equivalent to 435 hours of work.
Break in service	Plan year with less than 500 hours of service (435 hours of work)
Inactive participant	No hours of service during 2 consecutive plan years
Normal retirement benefit	
Eligibility	Age 65 or 5th anniversary of participation, if later
Monthly amount	• 4.30% of employer contributions for work performed prior to May 1, 2004, plus • 3.00% of employer contributions for work performed May 1, 2004 – April 30, 2007, plus • 1.00% of employer contributions for work performed on and after May 1, 2007. Payable for Life.

SUMMARY OF PLAN PROVISIONS (CONT.)

Contribution "discounting"	Contributions that are "discounted" according to the following schedule are not considered in determining benefits. • Contributions for work performed from June 1, 2006 through May 31, 2007 are generally "discounted" by 22% to 23%. • Contributions for work performed from June 1, 2007 through May 31, 2008 are generally "discounted" by 16% to 17%. Some contracts are discounted by 35%. • Contributions for work performed from June 1, 2008 through May 31, 2009 are generally "discounted" by 23% to 23.5%. The Floorlayers contract is discounted by 28%; the Millmen and some other contracts are discounted by 45%. • Contributions for work performed from June 1, 2009 through May 31, 2010 are generally "discounted" by 37% to 37.5%. The Floorlayers contract is discounted by 42%; the Millmen and some other contracts are discounted by 45%. • Contributions for work performed from June 1, 2010 through May, 31, 2011 are generally "discounted" by 45% to 46%. The Floorlayers contract is discounted by 51%; the Millmen and some other contracts are discounted by 50%. • Contributions for work performed from June 1, 2011 through May 31, 2012 are generally "discounted" by 50% to 53%. The Floorlayers contract is discounted by 56%. • Contributions for work performed from June 1, 2012 through May 31, 2013 are generally "discounted" by 55% to 57.75%. The Floorlayers contract is discounted by 60.75%. • Contributions for work performed on and after June 1, 2013 are generally "discounted" by 61%. Effective on and after January 1, 2019, the Liberty Fabricating contract is discounted by 20%.

SUMMARY OF PLAN PROVISIONS (CONT.)

Early retirement benefit	
Eligibility	Age 55 and 10 credit years, has met Applicable Index Requirement, worked at least 435 hours in the two years prior to retirement. Applicable Index Requirement is 80 points if participant had at least 76 points as of May 1, 2010; otherwise 85 points.
Monthly amount	Normal reduced by 1/3rd of 1% for each month under age 62 (unless eligible for grandfathered exception – see below). Payable for life.
Eligibility	Age 55 and 10 credit years or age 62 and 3 credit years, has not met Applicable Index Requirement, worked at least 435 hours in the two years prior to retirement.
Monthly amount	Normal reduced by 5/9% for each month under age 62 (unless eligible for grandfathered exception – see below). Payable for life.
Eligibility	Grandfathered exception: Active at retirement, meets the Applicable Index Requirement on or before August 1, 2015
Monthly amount	Early retirement benefit will not be less than normal reduced by 5%. Payable for life.
Vested benefit	
Eligibility	Three vesting years, did not work at least 435 hours in the two years prior to retirement
Monthly amount	20% of normal after 3 vesting years increasing 20% per year to 100% at 7 vesting years. Payable for life commencing at age 65, or reduced amount (5/9% reduction for each month by which commencement precedes age 65) commencing at early retirement age, if eligible.

SUMMARY OF PLAN PROVISIONS (CONT.)

Total and permanent disability benefit	
Eligibility	Under age 62, 5 credit years, disability award from the Social Security Administration.
Monthly amount	The greater of 75% of vested accrued normal or $260, multiplied by vested percentage subject to the following cap: • Capped at $525 for credit years 5-9 • Capped at $625 for credit years 10-15 • Capped at $725 for credit years 16-19 • Capped at $1,050 for credit years 20-24 • Capped at $1,350 for 25 or more credit years Payable until eligible for normal, early, recovery or death.
Eligibility	Under age 62, less than 5 credit years, disability award from the Social Security Administration.
Monthly amount	Lump sum payment equal to actuarial equivalent of vested accrued benefit.
Pre-retirement surviving spouse benefit	
Eligibility	Death of married vested participant
Monthly or lump sum amount	50% of participant's joint and 50% survivor. Payable to spouse for life commencing at participant's earliest retirement age.
Optional forms	• Joint and 50% survivor with pop-up • Joint and 75% survivor with pop-up • Joint and 100% survivor with pop-up • Life-ten years certain

HISTORICAL PLAN MODIFICATIONS

One-time payment

Effective date	May 1, 1994
Adoption date	July 18, 1994
Provisions	Retirees and beneficiaries receiving benefits as of 12/1/94 received a one-time payment on 1/1/95 equal to the average 12/1/94 payment ($623).

Retiree increase

Effective date	January 1, 1997 *(rescinded January 1, 2010)*
Adoption date	December 12, 1996
Provisions	Retirees and spouses receiving benefits as of 12/31/96 shall receive an increase in monthly benefits which corresponds to the retiree's years of credited service as described below:

Years of Credited Service	Increase in Monthly Benefit
0 – 9	$ 50.00
10 – 19	100.00
20 – 29	125.00
30 +	150.00

Vesting schedule

Effective date	May 1, 1997
Adoption date	December 12, 1996
Provisions	Vesting scale changed to 20% at 3 years increasing 20% per year to 100% at 7 years. Vesting for non-bargained employees remained at 100% for 5 years.

Normal retirement increase

Effective date	May 1, 1997
Adoption date	November 12, 1997
Provisions	Normal retirement benefit increased from 3.9% to 4.3% of employer contributions.

HISTORICAL PLAN MODIFICATIONS (CONT.)

Pre-retirement survivor annuity increase

Effective date	May 1, 1997
Adoption date	November 12, 1997
Provisions	The pre-retirement survivor annuity increased from joint & 50% survivor to joint and 100% survivor.

Retiree increase

Effective date	May 1, 1999 *(rescinded January 1, 2010)*
Adoption date	July 20, 2000
Provisions	Retirees and beneficiaries participating in an affiliated healthcare plan received a $100 per month increase.

Retiree increase

Effective date	May 1, 2000 *(rescinded January 1, 2010)*
Adoption date	December 18, 2000
Provisions	Retirees and beneficiaries participating in an affiliated healthcare plan received a $100 per month increase.

Pre-ERISA benefit

Effective date	May 1, 2000
Adoption date	October 19, 2000
Provisions	Participants who are active on or after May 1, 2000 and qualify for the reinstatement of Credit Years and Vesting Years shall have all Plan Years of contributions that remained in the Fund after the participant received his “cash termination benefit’’ before May 1, 1976 reinstated.

Retiree increase

Effective date	July 1, 2001 *(rescinded January 1, 2010)*
Adoption date	April 26, 2001
Provisions	Retirees and beneficiaries who retired between May 1, 2000 and July 1, 2001 and participated in an affiliated healthcare plan received a $100 per month increase.

HISTORICAL PLAN MODIFICATIONS (CONT.)

Plan merger	
Effective date	May 1, 2002
Adoption date	March 19, 2002
Provisions	Resilient Floor Decorators Local #2265 Pension Fund was merged into the Fund.
Joint and survivor option	
Effective date	January 1, 2002
Adoption date	July 18, 2001
Provisions	A 75% joint and survivor option was added to the plan.
Disability and employment	
Effective date	January 1, 2004
Adoption date	April 12, 2004
Provisions	The plan was amended to allow disabled participants to resume employment in supervisory capacity and continue to receive disability payments.
Normal retirement decrease	
Effective date	May 1, 2004
Adoption date	April 12, 2004
Provisions	The crediting rate for employer contributions for work performed on and after May 1, 2004 was decreased from 4.30% to 3.00%. Contributions for work performed prior to May 1, 2004 are still credited at 4.30%.
Normal retirement decrease	
Effective date	June 1, 2006
Provisions	The plan was amended so that contributions for work performed on or after June 1, 2006 are generally "discounted" by 22% to 23%.

HISTORICAL PLAN MODIFICATIONS (CONT.)

Normal retirement decrease	
Effective date	May 1, 2007
Adoption date	April 17, 2007
Provisions	The crediting rate for employer contributions for work performed on and after May 1, 2008 was decreased from 3.00% to 1.00%.
Non-credited contribution rate change	
Effective date	Various dates
Provisions	The plan was amended so that contributions for work performed on or after June 1, 2007 are generally "discounted" by 16% to 17%. Some contracts are discounted by 35%.
Change to Index 85 and minimum age 55	
Effective date	January 1, 2008
Adoption date	April 17, 2007
Provisions	For participants who became active on or after January 1, 2008, the age plus service equal to 80 is changed to age 55 and age plus service of 85.
Non-credited contribution rate change	
Effective date	Various dates
Provisions	The plan was amended so that contributions for work performed on or after June 1, 2008 are generally "discounted" by 23% to 23.5%. The Floorlayers contract is discounted by 28% and the Millmen and some other contracts are discounted by 45%.

HISTORICAL PLAN MODIFICATIONS (CONT.)

Non-credited contribution rate change

Effective date	Various dates
Provisions	The plan was amended so that contributions for work performed on or after June 1, 2009 are generally "discounted" by 37% to 37.5%. The Floorlayers contract is discounted by 42% and the Millmen and some other contracts are discounted by 45%.

Non-credited contribution rate change

Effective date	Various dates
Provisions	The plan was amended so that contributions for work performed on or after June 1, 2010 are generally "discounted" by 45% to 46%. The Floorlayers contract is discounted by 51% and the Millmen and some other contracts are discounted by 50%.

Elimination of post-retirement improvements

Effective date	January 1, 2010
Adoption date	March 10, 2010
Provisions	Post-retirement increases granted May 1, 1999; May 1, 2000; June 1, 2001 and December 31 1996 are eliminated.

Change to Index 85

Effective date	May 1, 2010
Adoption date	March 10, 2010
Provisions	For participants who are not grandfathered (age plus service of at least 76 on May 1, 2010), the index 80 requirement changed to index 85. Participants who joined the plan on or after May 1, 2007 must also be at least age 55 in order to qualify for index 85.

HISTORICAL PLAN MODIFICATIONS (CONT.)

Non-credited contribution rate change	
Effective date	Various dates
Provisions	The plan was amended so that contributions for work performed on or after June 1, 2011 are generally "discounted" by 52% to 53%. The Floorlayers contract is discounted by 56% and the Millmen and some other contracts are discounted by 50%.
Non-credited contribution rate change	
Effective date	June 1, 2011
Adoption date	July 12, 2012
Provisions	The "cap" on the non-credited contribution rate was removed retroactive to June 1, 2011.
Terms of Reciprocity Agreement	
Effective date	June 1, 2012
Adoption date	July 12, 2012
Provisions	The reciprocity agreement with the Michigan Carpenters' Pension Fund was modified so that only credited amounts are transferred back to the members' home funds.
Non-credited contribution rate change	
Effective date	Various dates
Provisions	The plan was amended so that contributions for work performed on or after June 1, 2012 are generally "discounted" by 55% to 57.75%. The Floorlayers contract is discounted by 60.75%.

HISTORICAL PLAN MODIFICATIONS (CONT.)

Early retirement benefit	
Effective date	August 1, 2013 (retro to September 1, 2008)
Adoption date	May 7, 2013
Provisions	No unreduced early retirements until age 62. Participants can retire as early as 55 with a reduced benefit. Early retirement reduction will be 5/9% per month prior to age 62 (1/3% per month if applicable Index requirement is satisfied). For active participants who qualify for the grandfather exception, the benefit will be reduced by no more than 5%. Participants, surviving spouses and beneficiaries who entered pay status between September 1, 2008 and August 1, 2013 will have their benefits recalculated as if the new early retirement rules had been in effect at the time of their retirement, but the benefit will not be reduced by more than 5%.
Vested benefit	
Effective date	August 1, 2013
Adoption date	May 7, 2013
Provisions	Participants who fail to cure a break in service by working 435 hours in the two years prior to retirement will have their benefit reduced 5/9% for each month under age 65.

HISTORICAL PLAN MODIFICATIONS (CONT.)

Disability benefit

Effective date: August 1, 2013 (retro to September 1, 2008)

Adoption date: May 7, 2013

Provisions: Participants must now obtain a disability award from the Social Security Administration in order to be eligible for disability benefits under the pension plan. Participants with disability benefits in pay status as of August 1, 2013 that commenced on or after September 1, 2008 must secure a Social Security disability award by August 1, 2015 in order to retain their benefit.

Additionally, disability benefits commencing on or after September 1, 2008 will be capped in accordance with the following schedule:

Credit Years	Cap on Monthly Benefit
5-9	$525
10-15	$625
16-19	$725
20-24	$1,050
25+	$1,350

Death benefits

Effective date: August 1, 2013

Adoption date: May 7, 2013

Provisions: Pre-retirement death benefits discontinued for unmarried participants. Surviving spouse pre-retirement death benefit reduced to 50% of the joint and 50% survivor annuity.

Pre- and post-retirement lump sum death benefits discontinued.

Non-credited contribution rate change

Effective date: Various dates

Provisions: The plan was amended so that contributions for work performed on or after June 1, 2013 are generally "discounted" by 61%.

HISTORICAL PLAN MODIFICATIONS (CONT.)

Suspension of benefit rules	
Effective date	August 1, 2013
Adoption date	May 7, 2013
Provisions	Effective for early retirements that commenced on or after September 1, 2008, early retirees who work any hours in prohibited employment will have their benefits suspended to the extent permitted by law.
Disability benefit settlement	
Effective date	August 1, 2013
Settlement date	October 18, 2016
Provisions	Due to the settlement of a class action lawsuit, the disability benefit change effective August 1, 2013 was partially reversed for retirees receiving a disability benefit as of August 1, 2013 who had an effective date on or after September 1, 2008. Such retirees were restored to 95% of their prior disability benefit amount, and back payments were made retroactive to August 1, 2013.

ACTUARIAL ASSUMPTIONS

The following assumptions are used throughout this report except as specifically noted herein.

Valuation date	May 1, 2018
Interest rates	
ERISA rate of return used to value liabilities	7.50% per year net of investment expenses.
Current liability	2.99% (in accordance with Section 412(l)(7)(C) of the Internal Revenue Code)
Operational expenses	$ 4,000,000 per year excluding investment expenses. For the present value of expenses for ASC 960, a 2.75% load was applied to the ASC 960 liabilities. This load was calculated by taking 3 years of actual expenses divided by 3 years of actual benefit payments.
Pop-up feature	Retirees receiving a joint and survivor form of benefit have pop-up amounts which are individually estimated. Liabilities for non-retired participants' benefits to be paid after retirement are increased by 0.6%.
Mortality	
Assumed plan mortality	RP-2014 Blue Collar Mortality Tables for employees and healthy annuitants adjusted backward to 2006 with the MP-2014 projection scale and projected forward using the MP-2018 projection scale.
Current liability	Separate annuitant and non-annuitant rates based on the RP-2000 Mortality Tables Report developed for males and females as required by Section 431(c)(6) of the Internal Revenue Code.

ACTUARIAL ASSUMPTIONS (CONT.)

Withdrawal

T-7 Turnover Table from The Actuary's Pension Handbook (less GAM 51 mortality) – specimen rates shown below. Assumed rate during second year of employment is 50%*, 30% for the third year, and 15% for the fourth and fifth years.

Age	Withdrawal Rate
25	.0967
30	.0930
35	.0871
40	.0775
45	.0635
50	.0422
55	.0155
60	.0015

* All newly reported participants are considered to have already worked their first year of employment.

Disability

30% of the 1964 OASDI male table - specimen rates shown below:

Age	Disability Rate
25	.0003
30	.0003
35	.0005
40	.0007
45	.0011
50	.0018
55	.0030
60	.0049

ACTUARIAL ASSUMPTIONS (CONT.)

Retirement

Active lives

According to the following schedule:

Age	Without Index 80 or 85 Requirements	With Index 80 or 85 Requirements
55	.10	.25
56	.10	.25
57	.10	.25
58	.10	.25
59	.15	.25
60	.15	.25
61	.30	.25
62	.30	.40
63	.30	.40
64	.05	.40
65+	1.00	1.00

Resulting in an average expected retirement age of 59.7

Inactive vested lives

Age 59 if at least 10 years of service, and age 62 if less than 10 years of service. It is assumed that inactive vested participants will not qualify for index 80 or 85.

Disabled lives

Disability benefit assumed payable until the earliest of age 62, recovery or death. Then normal retirement benefit commences.

Future Hours Worked

Vested lives — 1,600 hours per year, 0 after assumed retirement age

Non-Vested lives — 600 hours per year, 0 after assumed retirement age

Future hourly contribution rate

Based on individual's average rate received for the most recent plan year increased to reflect known bargained increases. Additionally, an average "discount" of 61% was assumed.

Age of participants with unrecorded birth dates

Based on average entry age of participants with recorded birth dates and same vesting status.

Marriage assumptions

65% assumed married with the male spouse 2 years older than his wife.

ACTUARIAL ASSUMPTIONS (CONT.)

Optional form assumption

For the non-retired participants, the following table shows the percent assumed to elect an optional form at retirement.

Optional form	Married Participants	Single Participants
Life annuity	15%	85%
Life-ten year certain	5%	15%
Joint & 50% survivor	20%	n/a
Joint & 75% survivor	15%	n/a
Joint & 100% survivor	45%	n/a

Deferred beneficiary lump sum payments

Benefit payments for deferred beneficiaries of deceased participants that are due a lump sum once the plan emerges from critical status are assumed to be paid 20 years after the valuation date.

QDRO benefits

Benefits to alternate payee included with participant's benefit until payment commences.

Section 415 limit assumptions

Dollar limit

$220,000 per year

Assumed form of payment for those limited by Section 415

Qualified joint and 100% survivor annuity.

Benefits not valued

Lump sum disability for participants under age 62 with less than 5 credit years.

RATIONALE FOR SELECTION OF ACTUARIAL ASSUMPTIONS

The non-prescribed actuarial assumptions were selected to provide a reasonable long term estimate of developing experience. The assumptions are reviewed annually, including a comparison to actual experience. The following describes our rationale for the selection of each non-prescribed assumption that has a significant effect on the valuation results.

ERISA rate of return used to value liabilities	Future rates of return were modeled based on the Plan's current investment policy asset allocation and composite, long-term capital market assumptions taken from Horizon Actuarial's 2018 survey of investment consultants. Based on this analysis, we selected a final assumed rate of 7.50%, which we feel is reasonable. This rate may not be appropriate for other purposes such as settlement of liabilities.
Mortality	The RP-2014 Blue Collar Mortality Tables for employees and healthy annuitants adjusted backward to 2006 with the MP-2014 projection scale and projected forward using the MP-2018 projection scale was chosen as the base table for this population. The blue collar table was chosen based on the industry of plan participants.
Retirement	Actual rates of retirement by age were last studied for the period May 1, 2012 and April 30, 2015. The assumed future rates of retirement were selected based on the results of this study. No further adjustments were deemed necessary at this time.
Withdrawal	Actual rates of withdrawal by age were studied for the period May 1, 2013 and April 30, 2018. The assumed future rates of withdrawal were selected based on the results of this study.
Future hours worked	Based on review of recent plan experience adjusted for anticipated future changes in workforce.

ACTUARIAL ASSUMPTIONS USED FOR PROJECTIONS

The assumptions used for the credit balance, funded ratio and PPA zone projections are the same as used throughout the report with the following exceptions.

Assumed return on fund assets	
Current year projections	6.20% for the first 10 years (5/1/2018-4/30/2028) 7.50% thereafter
Prior year projections	7.50% for the first year (5/1/2017-4/30/2018) 6.60% for the next 10 years (5/1/2018-4/30/2028) 7.50% thereafter
Future total hours worked	
Current year projections	8,400,000 for the plan year ending in 2019 8,200,000 for the plan year ending in 2020 8,000,000 for the plan year ending in 2021 7,300,000 for the plan year ending in 2022 7,000,000 thereafter
Prior year projections	9,200,000 for the plan year ending in 2018 8,500,000 for the plan year ending in 2019 8,250,000 for the plan year ending in 2020 8,000,000 for the plan year ending in 2021 7,000,000 thereafter
Contribution rate increases since prior year	None
Plan changes since prior year	None
Open group projections	Stable population assumed with new entrants replacing active participants as they withdraw, retire or die. New entrants are based upon entry age of the current active population.

ACTUARIAL METHODS

Funding method	
ERISA Funding	Traditional unit credit cost method, effective May 1, 2003.
Funding period	Individual entry age normal with costs spread as a level dollar amount over service.
Population valued	
Actives	Eligible employees with at least one hour during the preceding plan year.
Inactive vested	Vested participants with no hours during the preceding plan year.
Retirees	Participants and beneficiaries in pay status as of the valuation date.
Asset valuation method	
Actuarial value	Smoothed market value effective May 1, 1997. Gains and losses are spread over a 5-year period. The actuarial value is limited to not less than 80% and not more than 120% of the actual market value of assets in any plan year.
Unfunded vested benefits	For the presumptive method, actuarial value, as described above, is used.
Pension Relief Act of 2010	• 10-year smoothing was elected with respect to the loss incurred during the plan year ended in 2009. • The 130% cap on actuarial value of assets was elected for the plan years beginning in 2009 and 2010. • 30-year amortization of net investment loss was elected with respect to the loss incurred during the plan year ended in 2009. The loss was allocated to future years using the "prospective method" of IRS. The amount of each allocation is shown in Appendix C.
Effective date of amortization extension	May 1, 2008

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
Charges							
5/1/1977	Lath. UAL		45	4	0	291,741	81,027
5/1/1977	UAL		45	4	0	17,718,623	4,921,122
5/1/1978	Amendment		45	5	0	3,376,803	776,397
5/1/1979	Amendment		45	6	0	4,612,086	914,029
5/1/1980	Amendment		45	7	0	9,177,168	1,611,770
5/1/1984	Amendment		35	1	0	890,079	890,079
5/1/1984	Lath. ben		35	1	0	36,795	36,795
5/1/1985	Amendment		35	2	0	3,530,634	1,829,122
5/1/1985	Lath. ben		35	2	0	12,853	6,661
5/1/1986	Amendment		35	3	0	2,971,672	1,062,993
5/1/1987	Amendment		35	4	0	9,983,429	2,772,771
5/1/1987	Method change		35	4	0	3,315,808	920,922
5/1/1989	Amendment		35	6	0	3,524,816	698,551
5/1/1990	Amendment		35	7	0	13,325,591	2,340,349
5/1/1991	Assumption		35	8	0	7,890,551	1,253,145
5/1/1992	Amendment		35	9	0	3,951,665	576,270
5/1/1993	Assumption		35	10	0	67,524	9,150
5/1/1994	Amendment		35	11	0	5,390,050	685,401
5/1/1995	Assumption		35	12	0	13,015,155	1,565,182
5/1/1996	Assumption	19,314,830	35	13	0	12,256,551	1,403,110
5/1/1997	Amendment	115,128,332	35	14	0	76,976,056	8,434,955
5/1/1997	Assumption	2,432,702	35	14	0	1,626,528	178,234
5/1/1999	Amendment	22,642,031	35	16	0	16,508,890	1,679,932
5/1/1999	Experience	20,053,818	20	1	0	1,408,505	1,408,505
5/1/2000	Amendment	36,206,741	35	17	0	27,365,028	2,698,320
5/1/2000	Assumption	10,287,556	35	17	0	7,775,330	766,684
5/1/2000	Experience	5,279,519	20	2	0	760,722	394,108
5/1/2001	Experience	33,142,699	20	3	0	7,252,134	2,594,157
5/1/2002	Amendment	65,943,178	35	19	0	52,995,052	4,950,029
5/1/2002	Experience	70,475,288	20	4	0	20,624,901	5,728,304
5/1/2003	Assumption	85,964,800	35	20	0	70,925,316	6,471,832
5/1/2003	Experience	254,431,353	20	5	0	92,735,197	21,321,738
5/1/2004	Experience	20,035,740	20	6	0	8,687,262	1,721,652
5/1/2005	Experience	116,546,347	20	7	0	58,221,566	10,225,349
5/1/2006	Assumption	32,822,460	35	23	0	28,898,700	2,487,581

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
5/1/2006	Experience	61,302,815	20	8	0	34,461,935	5,473,101
5/1/2007	Assumption	97,147,893	35	24	0	87,074,795	7,375,039
5/1/2007	Experience Loss	36,021,921	20	9	0	22,380,357	3,263,726
5/1/2008	Assumptions	29,589,137	20	10	0	20,059,193	2,718,458
5/1/2008	Experience	21,904,410	20	10	0	14,849,531	2,012,435
5/1/2009	Experience	29,524,251	15	6	0	15,799,966	3,131,258
5/1/2009	Relief 09 Asset	163,705,587	29	20	0	143,228,617	13,069,403
5/1/2010	Experience	16,798,389	15	7	0	10,127,147	1,778,612
5/1/2011	Assumptions	14,968,746	15	8	0	9,963,278	1,582,326
5/1/2011	Expereince	19,762,045	15	8	0	13,153,724	2,089,019
5/1/2011	Relief 09 Asset	83,446,610	27	20	0	74,499,236	6,797,947
5/1/2012	Assumptions	3,586,082	15	9	0	2,595,395	378,487
5/1/2012	Experience	127,391,921	15	9	0	92,198,862	13,445,352
5/1/2012	Relief 09 Asset	9,268,532	26	20	0	8,370,561	763,802
5/1/2013	Assumptions	112,407,257	15	10	0	87,409,320	11,845,867
5/1/2013	Relief 09 Asset Loss	42,325,699	25	20	0	38,709,164	3,532,155
5/1/2014	Relief 09 Asset Loss	39,456,467	24	20	0	36,623,855	3,341,874
5/1/2015	Assumptions	66,762,182	15	12	0	58,504,254	7,035,631
5/1/2015	Experience	53,022,966	15	12	0	46,464,466	5,587,744
5/1/2016	Amendment	19,478,191	15	13	0	17,930,727	2,052,679
5/1/2016	Experience	83,462,560	15	13	0	76,831,792	8,795,575
5/1/2017	Assumptions	46,472,895	15	14	0	44,693,576	4,897,475
5/1/2017	Experience	62,924,769	15	14	0	60,515,554	6,631,231
5/1/2018	Experience	49,896,267	15	15	0	49,896,267	5,258,242
				Total Charges:		**1,654,442,353**	**218,273,664**

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
Credits							
5/1/1989	Assumption		30	1	0	2,565,526	2,565,526
5/1/1990	Lath. assum		30	2	0	52,463	27,180
5/1/1992	Assumption		30	4	0	1,476,671	410,128
5/1/1999	Assumptions	104,779,461	30	11	0	66,413,367	8,445,154
5/1/2009	Amendment	19,793,553	15	6	0	10,592,560	2,099,247
5/1/2009	Method (Relief)	77,104,031	30	21	0	68,231,714	6,095,115
5/1/2010	Amendment	101,829,896	15	7	0	61,389,586	10,781,743
5/1/2010	Relief 09 Asset	55,383,209	28	20	0	48,926,246	4,464,449
5/1/2013	Amendment	186,630,145	15	10	0	145,125,984	19,667,733
5/1/2013	Experience Gain	5,974,815	15	10	0	4,646,087	629,647
5/1/2014	Amendment	66,875,803	15	11	0	55,422,932	7,047,605
5/1/2014	Assumptions	24,371,644	15	11	0	20,197,854	2,568,369
5/1/2014	Experience	25,585,607	15	11	0	21,203,922	2,696,300
5/1/2016	Assumptions	10,447,082	15	13	0	9,617,103	1,100,950
5/1/2018	Assumptions	19,745,105	15	15	0	19,745,105	2,080,808
				Total Credits:		**535,607,120**	**70,679,954**
				Net Charges:		**1,118,835,233**	**147,593,710**
				Less Credit Balance:		-327,315,629	
				Less Reconciliation Balance:		0	
				Unfunded Actuarial Liability:		**1,446,150,862**	

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
Charges							
5/1/1979	Amendment		40	1	0	1,143,729	1,143,729
5/1/1980	Amendment		40	2	0	3,799,344	1,968,335
5/1/1989	Amendment		30	1	0	874,096	874,096
5/1/1990	Amendment		30	2	0	5,516,787	2,858,094
5/1/1991	Assumption		30	3	0	4,189,993	1,498,800
5/1/1992	Amendment		30	4	0	2,437,298	676,928
5/1/1993	Assumption		30	5	0	46,023	10,582
5/1/1994	Amendment		30	6	0	3,944,604	781,747
5/1/1995	Assumption		30	7	0	10,042,004	1,763,658
5/1/1996	Assumption	19,314,830	30	8	0	9,848,582	1,564,111
5/1/1997	Amendment	115,128,332	30	9	0	63,863,171	9,313,161
5/1/1997	Assumption	2,432,702	30	9	0	1,349,453	196,791
5/1/1999	Amendment	22,642,031	30	11	0	14,351,418	1,824,932
5/1/2000	Amendment	36,206,741	30	12	0	24,206,279	2,911,009
5/1/2000	Assumption	10,287,556	30	12	0	6,877,819	827,116
5/1/2002	Amendment	65,943,178	30	14	0	48,157,392	5,277,036
5/1/2003	Assumption	85,964,800	30	15	0	65,134,330	6,864,082
5/1/2004	Experience	20,035,740	15	1	0	2,154,312	2,154,312
5/1/2005	Experience	116,546,347	15	2	0	24,103,691	12,487,453
5/1/2006	Assumption	32,822,460	30	18	0	27,178,755	2,604,837
5/1/2006	Experience	61,302,815	15	3	0	18,299,755	6,545,995
5/1/2007	Assumption	97,147,893	30	19	0	82,386,702	7,695,370
5/1/2007	Experience Loss	36,021,921	15	4	0	13,803,713	3,833,805
5/1/2008	Assumption	29,589,137	15	5	0	13,672,370	3,143,561
5/1/2008	Experience	21,904,410	15	5	0	10,121,457	2,327,132
5/1/2009	Experience	29,524,251	15	6	0	15,799,966	3,131,258
5/1/2009	Relief08 Asset Loss	163,705,587	29	20	0	143,228,617	13,069,403
5/1/2010	Experience	16,798,389	15	7	0	10,127,147	1,778,612
5/1/2011	Assumptions	14,968,746	15	8	0	9,963,278	1,582,326
5/1/2011	Experience	19,762,045	15	8	0	13,153,724	2,089,019
5/1/2011	Relief 09 Asset	83,446,610	27	20	0	74,499,236	6,797,947
5/1/2012	Assumptions	3,586,082	15	9	0	2,595,395	378,487
5/1/2012	Experience	127,391,917	15	9	0	92,198,857	13,445,352
5/1/2012	Relief 09 Asset	9,268,532	26	20	0	8,370,561	763,802
5/1/2013	Assumptions	112,407,257	15	10	0	87,409,320	11,845,867

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period Years	Remaining Period Months	5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
5/1/2013	Relief 09 Asset Loss	42,325,699	25	20	0	38,709,164	3,532,155
5/1/2014	Relief 09 Asset Loss	39,456,467	24	20	0	36,623,855	3,341,874
5/1/2015	Assumptions	66,762,182	15	12	0	58,504,254	7,035,631
5/1/2015	Experience	53,022,966	15	12	0	46,464,466	5,587,744
5/1/2016	Amendment	19,478,191	15	13	0	17,930,727	2,052,679
5/1/2016	Experience	83,462,560	15	13	0	76,831,792	8,795,575
5/1/2017	Assumptions	46,472,895	15	14	0	44,693,576	4,897,475
5/1/2017	Experience	62,924,769	15	14	0	60,515,554	6,631,231
5/1/2018	Experience	49,896,267	15	15	0	49,896,267	5,258,242
				Total Charges:		**1,345,018,833**	**183,161,351**

Credits

5/1/1989	Assumption		30	1	0	2,565,526	2,565,526
5/1/1990	Lath. assum		30	2	0	52,463	27,180
5/1/1992	Assumption		30	4	0	1,476,671	410,128
5/1/1999	Assumptions	104,779,461	30	11	0	66,413,367	8,445,154
5/1/2009	Amendment	19,793,553	15	6	0	10,592,560	2,099,247
5/1/2009	Method (Relief)	77,104,031	30	21	0	68,231,714	6,095,115
5/1/2010	Amendment	101,829,896	15	7	0	61,389,586	10,781,743
5/1/2010	Relief08 Asset	55,383,209	28	20	0	48,926,246	4,464,449
5/1/2013	Amendments	186,630,145	15	10	0	145,125,984	19,667,733
5/1/2013	Experience	5,974,815	15	10	0	4,646,087	629,647
5/1/2014	Amendment	66,875,803	15	11	0	55,422,932	7,047,605
5/1/2014	Assumptions	24,371,644	15	11	0	20,197,854	2,568,369
5/1/2014	Experience	25,585,607	15	11	0	21,203,922	2,696,300
5/1/2016	Assumptions	10,447,082	15	13	0	9,617,103	1,100,950
5/1/2018	Assumptions	19,745,105	15	15	0	19,745,105	2,080,808
				Total Credits:		**535,607,120**	**70,679,954**

Date Established	Source of Change in Unfunded Liability	Original Amount	Original Period	Remaining Period		5/1/2018 Outstanding Balance	5/1/2018 Amortization Payment
				Years	Months		
					Net Charges:	**809,411,713**	**112,481,397**
					Less Credit Balance:	-636,739,149	
					Less Reconciliation Balance:	0	
					Unfunded Actuarial Liability:	**1,446,150,862**	

RULES FOR ENDANGERED AND CRITICAL STATUS

Background

The Pension Protection Act of 2006 ("PPA"), enacted in August 2006, established special rules for plans in "Endangered" or "Critical" status. These rules become effective with the plan year beginning in 2008 and were originally scheduled to "sunset" in 2015.

The Multiemployer Pension Reform Act of 2014 ("MPRA"), enacted in December 2014, made the provisions contained in the PPA permanent. MPRA also made numerous changes to the PPA rules, including adding a new status for deeply troubled plans: Critical and Declining.

Informally, Critical Status is often referred to as "red zone" and Endangered Status as "yellow zone." A plan that is neither Critical nor Endangered is said to be "green zone."

Criteria for Endangered and Critical

The table below summarizes the criteria for these categorizations. Projected deficiencies are calculated as of the last day of each plan year and are based on contribution rates codified in bargaining agreements and, if applicable, wage allocations.

Critical Status ("Red Zone")	*Endangered Status ("Yellow Zone")*
GETTING IN:	
Plan is Critical if it is described in one or more of the following: • Funded percentage is less than 65%, and, inability to pay nonforfeitable benefits and expenses for next 7 years, or • Projected funding deficiency (not recognizing extensions) in the current year or next 3 years (next 4 years if funded at less than 65%), or • (1) Contributions are less than current year costs (i.e. "normal cost") plus interest on any unfunded past liabilities, and, (2) value of vested benefits for non-actives is greater than for actives, and, (3) projected funding deficiency (not recognizing extensions) in the current year or next 4 years, or • Inability to pay all benefits and expenses for next 5 years.	Plan is Endangered if it is not Critical and it is described in one of the following: • Funded percentage is less than 80%, or • Projected funding deficiency in the current year or next 6 years. A non-critical plan that meets both of the preceding criteria is considered "Seriously Endangered" A plan that meets one of the two Endangered Status criteria above, but was not in Critical or Endangered for the preceding year, will remain not Critical or Endangered (i.e. it will be in "green zone") provided it is not projected to meet either of the two Endangered Status criteria as of the end of the 10th plan year following the certification year

RULES FOR ENDANGERED AND CRITICAL STATUS (CONT.)

Critical Status ("Red Zone")	*Endangered Status ("Yellow Zone")*
GETTING IN (cont.):	
A plan with a 5-year amortization extension under IRC Section 431(d) that previously emerged from Critical Status in PYB 2015 or later will re-enter Critical Status <u>only</u> if it is described in one of the following: • Projected funding deficiency in the current year or next 9 years (<u>including</u> amortization extensions), or, • Projected insolvency within the next 30 years	
GETTING OUT:	
Plan emerges from Critical Status when it meets all of the following: • No longer meets any of the Critical Status tests, <u>and</u>, • No projected funding deficiencies in the current year or next 9 years (<u>including</u> amortization extensions), <u>and</u>, • No projected insolvencies in the next 30 years A plan with a 5-year amortization extension under IRC Section 431(d) emerges from Critical Status when it meets all the following: • No projected funding deficiencies in the current year or next 9 years (<u>including</u> amortization extensions), <u>and</u>, • No projected insolvencies in the next 30 years	Plan emerges from Endangered Status when it no longer meets the requirements to be classified as Endangered or when it enters Critical Status

RULES FOR ENDANGERED AND CRITICAL STATUS (CONT.)

Restrictions for Endangered and Critical Plans

The Trustees of a plan that is in Endangered or Critical status face a number of restrictions in plan improvements that can be adopted and bargaining agreements that can be accepted.

Period	*Endangered/Critical Restrictions*
Date of first certification through adoption of funding improvement/rehabilitation plan ("plan adoption period")	• No reduction in level of contributions for any participants • No suspension of contributions • No exclusion of new or younger employees • No amendment that increases the <u>liabilities</u> of the plan by reason of any increase in benefits, change in accrual, or change in vesting unless required by law
After adoption of a funding improvement/rehabilitation plan until end of funding improvement/rehabilitation period	• Cannot be amended so as to be inconsistent with funding improvement/rehabilitation plan • No amendment that increases benefits, including future accruals, unless actuary certifies as being paid for with contributions not contemplated in funding improvement/ rehabilitation plan and still expected to meet applicable benchmark after considering the amendment

Additionally, Critical status plans cannot pay benefits greater than the single life annuity once the initial red zone notice is sent unless the benefit is eligible for automatic cash-out.

Critical and Declining Plans

Beginning in 2015, plans that are in Critical Status and are projecting insolvency within the next 15 years (20 years in some circumstances) are certified by the actuary as being in "Critical and Declining." These plans may have access to new tools that will allow them to reduce many previously-untouchable benefits, including benefits for participants in pay status. However, these expanded benefit reductions require government approval, must not be rejected by a majority of all participants through a vote, and are subject to a number of other requirements and limitations.

Selected Other MPRA Changes (effective with 2015 plan years)

- Plans projected to be Critical within the next 5 years can elect to be in Critical Status immediately
- New contribution rate increases required by a funding improvement or rehabilitation plan are not considered in calculating an employer's withdrawal liability or payment schedule
- If, upon the expiration of a collective bargaining agreement under a funding improvement or rehabilitation plan, bargaining parties do not adopt a new agreement consistent with an updated schedule, the Trustees must implement the update to the schedule previously adopted.

GLOSSARY OF COMMON PENSION TERMS

Benefits

Accrued Benefit: A benefit that an employee has earned (or accrued) through past participation in the plan. It is the amount payable at normal retirement age.

Why it matters: Under the law, Accrued Benefits generally may not be reduced by plan amendment (note that special rules allowing for limited reduction and/or suspension of accrued benefits apply to critical status, critical and declining status and insolvent plans).

Actuarial Equivalence: Given a set of actuarial assumptions, when two different sets of payment scenarios have an equal present value.

Early Retirement Reduction Factor: A retirement benefit that begins before normal retirement age may be reduced. The plan document defines the amount of the reduction by formula or a table of factors. This reduction may or may not be actuarially equivalent, but its present value can be no less than actuarially equivalent to the benefit payable at normal retirement age.

Benefit Crediting (Accrual) Rate: A general reference to the calculation of the amount of monthly retirement benefit earned per dollar contributed or per year or hour worked.

Assets

Market Value of Assets: This is the fair value of all assets in the fund on an accrued, not cash basis. The market value of assets matches the value in the plan audit.

Actuarial Value of Assets: The amount of assets recognized for actuarial valuation purposes. Recent changes in market value may be partially recognized (there are variations allowed on the exact recognition). Generally the actuarial value is limited to not be less than 80% or more than 120% of the market value.

Why it matters: Many funding calculations use this "smoothed" asset value method to lessen the impact of volatility in the market value of plan assets.

Assumed Rate of Return: Long term assumption of the rate of return on assets based upon the diversification mix of invested assets.

Why it matters: This assumption is used in calculating the present values discussed in the Liabilities section below. The Assumed Rate of Return has an inverse relationship with plan liabilities. In other words, a lower Assumed Rate of Return increases liabilities, while a higher Assumed Rate of Return decreases plan Liabilities.

GLOSSARY OF COMMON PENSION TERMS (CONT.)

Liabilities

Present Value of Accrued Benefits: The discounted value of benefit payments due in the future but based only on the current Accrued Benefits of each participant. The value is based on actuarial assumptions including an assumed rate of investment return.

Why it matters: This liability is one of the primary factors in determining a plan's annual PPA funded status (see Funded Ratio).

Present Value of Vested Benefits: The discounted value of Accrued Benefits that are considered vested (non-forfeitable). Benefits that are not vested include those of participants who have not satisfied the plan vesting requirement (usually five years of service). In addition under the law some death and temporary disability benefits are also considered non-vested regardless of service because they are not considered protected benefits.

Why it matters: This liability is the primary driver of a plan's Employer Withdrawal Liability.

Actuarial (Accrued) Liability: For inactive members this is the same as the Present Value of Accrued Benefits above. For active members this depends on the cost method selected by the actuary. Under the accrued benefit or traditional unit credit cost method this is also the same as the Present Value of Accrued Benefits. Under other cost methods (including most commonly entry age normal) this represents an alternate allocation of projected benefit cost over the working lifetime of active members. Under the entry age normal cost method, the active Actuarial Liability is larger than the Present Value of Accrued Benefits.

Unfunded Actuarial Liability: The Actuarial Liability less the Actuarial Value of Assets.

Current Liability: This is similar to the Present Value of Accrued Benefits, but uses a statutory, significantly lower, interest rate (equivalent to an expected rate of return on a bond only-type portfolio) and statutory mortality tables. The lower interest rate means that Current Liability tends to be significantly higher than the Present Value of Accrued Benefits. This number has very little impact on multiemployer plans.

Normal Cost: The present value of all benefits that are expected to accrue or to be earned under the plan during the plan year. The way in which a benefit is considered to be earned varies with the actuarial cost method.

Risk: The potential of future deviation of actual results from expectations derived from actuarial assumptions.

GLOSSARY OF COMMON PENSION TERMS (CONT.)

Funding

Funded Ratio (Funded Percentage): Actuarial Value of Assets divided by the Present Value of Accrued Benefits. This is one of two key measures used to determine a plan's annual PPA funded status. This may also be referred to as PPA Funded Ratio. This must be greater than 80% to avoid endangered status.

Credit Balance: The accumulated excess of actual contributions over legally required minimum contributions as maintained in the funding standard account. The funding standard account is maintained by the actuary in the valuation process and reported annually in schedule MB to the Form 5500 filing. A negative credit balance is known as an accumulated funding deficiency. Prior to PPA, an accumulated funding deficiency caused an immediate excise tax (waiver under PPA if certain conditions are met). After PPA, a current or projected funding deficiency is one of the key measures used in determining the annual PPA status. It can eventually trigger an excise tax levied on contributing employers.

Withdrawal Liability

Unfunded Vested Benefits (UVB): Present Value of Vested Benefits less the value of plan assets determined on either an actuarial or market value basis. The selection of asset measurement is part of the withdrawal liability method of the Plan.

Employer Withdrawal Liability (EWL): An employer that withdraws from a multiemployer plan is liable for its proportionate share of Unfunded Vested Benefits, determined as of the date of withdrawal.

Why it matters: If a contributing employer leaves the plan while it has Unfunded Vested Benefits liability, that employer's allocated share of Employer Withdrawal Liability is either assessed, as applicable, or reallocated among the plan's remaining active employers if the presumptive method is used. A construction employer withdrawing from a construction industry plan will not be assessed unless they continue performing work within the jurisdiction of the CBA or restart such work within a period of 5 years. Small amounts (under $150,000) are generally reduced or eliminated pursuant to the "de minimis rule."