BRICKLAYERS AND ALLIED CRAFTSMEN LOCAL 7 PENSION FUND

**APPLICATION TO THE PENSION BENEFIT GUARANTY CORPORATION
FOR A PARTITION ORDER**

EXHIBIT 6A

Bricklayers Local No. 7 Pension Plan
EIN Number: 34-6666798
Regulation 4233.7(c) - Actuarial Assumptions used for Projections

Document 6A1 describes the assumptions used by the actuary for performing projections required under sections ERISA Regulation Sections 4233.7(a)(3) to (10). The certification of critical and declining status required by Section 4233.7(a)(2) was prepared before this submission and includes a few assumptions that differ from those used to prepare other projections contained herein. These differences are noted and explained. Further differences in assumptions are due to expected differences in behavior of the members and employers in situations where the plan is or is not insolvent.

Document 6A2 provides supporting documentation for certain assumptions including the actuary's rationale for the selection of major assumptions.

Document 6A3 provides additional disclosures relating to the use of different assumptions.

Documents 6A1 to 6A3 are based on the actuary's interpretation of the requirements of Regulation 4233.7, and Appendix B of Revenue Procedure 2017-43.

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Document 6A1

Actuarial Assumptions and Methods Used for Projections

Investment Returns

- For certification of critical and declining status required by ERISA Regulation Section 4233.7(a)(2):

Time Period	Assumed Rate of Return
5/1/2019 – 4/30/2028	6.00%
5/1/2028+	7.00%

- For all other projections:

Time Period	Assumed Rate of Return
5/1/2019 – 4/30/2029	5.75%[1]
5/1/2029+	6.75%

The rates were updated based on *Survey of Capital Market Assumptions: 2019 Edition*, published by Horizon Actuarial Services, LLC.

Assumed future investment percentages, as provided by Graystone Consulting, are shown below:

Asset Class	Allocation
US Large Cap	35%
US Small/Mid Cap	10%
Non-US Developed	18%
US Fixed - Core	30%
Treasuries/Cash	1%
Hedge Funds	6%

Since most assets are liquid, no change in investment mix was assumed over time.

Mortality

Mortality was assumed to follow the RP-2006 blue collar mortality tables projected generationally using the MP-2018 projection scale. Sex-distinct mortality rates were used for

[1] For the first 5 months of the 5/1/2019-4/30/2020 plan year, actual investment income was used. For the remaining 7 months of such plan year (the “initial period”), a return equal to 7/12$^{\text{th}}$s of 5.75% was assumed.

males and females. The employee tables were used for all participants not in pay status while the healthy annuitant tables were used for all participants in pay status.

No adjustments (such as set-forwards or rate multipliers) were applied.

Other Demographic Assumptions

- Withdrawal

  Ultimate rates of withdrawal are assumed to follow table T-8 (less GAM-51 mortality) from *The Actuary's Pension Handbook*., but modified starting at age 49 in order to account for the incidence of disability. (Since the Plan does not provide a special a disability benefit, it was assumed that disabled participants would receive a withdrawal or retirement benefit, as appropriate). The complete table is shown below:

Age	Withdrawal Rate
20	0.119384
21	0.118807
22	0.118208
23	0.117584
24	0.116930
25	0.116242
26	0.115515
27	0.114745
28	0.113924
29	0.113046
30	0.112095
31	0.111053
32	0.109903
33	0.108617
34	0.107172

Age	Withdrawal Rate
35	0.105540
36	0.103702
37	0.101635
38	0.099328
39	0.096769
40	0.093957
41	0.090862
42	0.087459
43	0.083754
44	0.079749
45	0.075447
46	0.070816
47	0.065810
48	0.060394
49	0.054556

Age	Withdrawal Rate
50	0.053166
51	0.046026
52	0.038798
53	0.031717
54	0.025038
55	0.018990
56	0.013749
57	0.010000
58	0.010000
59	0.010000
60	0.010000
61	0.010000
62	0.010000
63+	-

Additionally, special select rates are applied during the first 3 years that a participant is reported:

Year Reported	Select Withdrawal Rate
First	0.35
Second	0.35
Third	varies[2]

- Disability
  Since the Plan does not provide disability benefits no disabilities are assumed, however, withdrawal rates have been adjusted to account for disability incidence (see note in withdrawal section above).

- Retirement – Active Participants
  For active participants, the following rates of retirement are assumed to apply:

Age	Retirement Rate
55	0.15
56	0.05
57	0.05
58	0.10
59	0.20
60	0.30
61	0.40
62+	1.00

[2] For purposes of 4233.7(a)(2) (the 2019 PPA certification), a rate of 0.20 was used; for all other purposes, 0.35 was used. When the 2019 actuarial valuation was completed, this assumption was updated from 0.20 to 0.35 based on analysis of experience through 4/30/2019.

- <u>Retirement – Inactive Vested Participants</u>

  - For purposes of the certification of critical and declining status required by Section 4233.7(a)(2) and the 2019 valuation report furnished pursuant to Section 4233.7(a)(1), inactive vested participants were assumed to commence benefits according to the following table:

Criteria	Assumed Commencement Age
Terminated prior to 5/1/1997	Normal retirement age
Terminated after 5/1/1997 with less than 10 years of service	Normal retirement age
Terminated after 5/1/1997 with less 10+ years of service	Age 59

  - For all other purposes, inactive vested participants were assumed to commence benefits in accordance with the following table of retirement rates:

Age	Retirement Rate
55	0.10
56	0.05
57	0.05
58	0.10
59	0.10
60	0.15
61	0.15
62	0.25
63	0.15
64	0.15
65	0.15
66	0.50
67+	1.00

The inactive vested retirement assumption was changed following the completion of the certification of critical and declining status required by Section 4233.7(a)(2) in order to more accurately reflect exact cash flow projections for the longer period after the current projected insolvency date.

- <u>Percent Married</u>
  The critical and declining status certification and all actuarial valuation reports prior to 2019 included an assumption that 100% of participants are married at retirement. The other projections contained herein use a 75% married assumption.

<u>Assumptions Regarding Form and Commencement Age of Benefits</u>

- <u>"Take Up" Rate of Benefit Form Election</u>

  - For purposes of the certification of critical and declining status required by Section 4233.7(a)(2) and the 2019 valuation report furnished pursuant to Section 4233.7(a)(1), all future retirees were assumed to elect a life annuity.

  - For all other purposes, future retirees were assumed to elect benefit forms according to the following table. Note that, in addition to the 3 assumed forms of payment in the table, the plan also provides for life-5 year certain and joint & 75% survivor options, which were <u>not</u> valued. It was determined that valuing all 5 possible optional forms would not yield a material improvement in the accuracy of the projections.

Benefit Form	Married Participants (75% Assumed)	Single Participants (25% Assumed)
Life annuity	60%	100%
Joint & 50% survivor	20%	n/a
Joint & 100% survivor	20%	n/a

  The change in assumption was made to more accurately reflect future cash flows for the longer period after the current projected insolvency date.

- <u>Pre-retirement Death Benefit Coverage</u>
  The plan provides that, unless a participant explicitly waives pre-retirement death benefit coverage, such coverage will be "paid for" via a reduction in the participant's accrued benefit. For purposes of the 2019 critical and declining certification, projections assumed no pre-retirement death benefit coverage (implicitly assuming that any pre-retirement death benefits would be offset by the associated reduction in accrued benefits). For all other projections contained herein (including the 2019 valuation report furnished pursuant to Section 4233.7(a)(1)), an explicit married percentage of 75% is assumed and all married participants are assumed to elect pre-retirement death coverage.

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Assumptions Regarding Missing or Incomplete Data

- Assumption Regarding Terminated Vested Participants Beyond Normal Retirement Age
  Absent explicit information to the contrary, all known inactive vested participants were assumed to be alive.

- Assumptions to Fill In Other Missing Data
  The age of participants with unrecorded dates of birth was estimated based on the average entry age of participants with recorded dates of birth and the same vesting status.

- Pending Reciprocity
  Data investigations related to preparing for this filing uncovered a few participants with money in this Plan that should have been reciprocated out to other bricklayer pension plans. These participants have been excluded from all projections other than assuming payment in an amount equal to contributions made on their behalf in the current year.

  The full size of this group will not be known until after the December Board of Trustees meeting and it is possible other similarly situated participants could come forward at a later date. We have estimate a total transfer due to late reciprocity of $40,000 will be paid prior to the end of the current plan year (i.e., prior to 4/30/2020). This late reciprocity primarily covers hours worked in the last 4 to 6 years and will therefore lower historical hours by 1,000 to 1,500 hours per year.

  In addition, there is a lump sum death benefit of just under $5,000 that will be paid in December 2019 and is not reflected elsewhere in our data. Therefore, we assumed a total onetime payment of $45,000.

New Entrant Profile

- The new entrant assumption is the same for all projections that use explicit new entrants. Distribution of assumed future new entrants by age and sex are as follows:

Age	Sex	Distribution
25	M	28%
30	M	18%
35	M	9%
40	M	15%
45	M	9%
50	M	8%
55	M	13%

- Future new entrants joining the plan during the plan year ending 4/30/2020 were assumed to work 991 hours during their initial year of participation. Subsequent years' hours were adjusted on the same basis as plan-wide hours. New entrants joining the plan in subsequent years were assumed to work the same number of hours in each year as a member of the initial cohort works in such year.

- For purposes of the critical and declining status determination required by Section 4233.7(a)(2), no explicit new entrant profile was used. Normal cost was assumed constant and was used to indirectly estimate any emerging benefit payment streams due to new entrants prior to insolvency. These projections are effectively superseded by the more robust projections contained elsewhere in the filing.

Contribution Rates

- Projections without a partition (i.e., those required by ERISA Regulation Sections 4233.7(a)(1), (2), (3), (4), (7), (9), and (10)) assume the current $6.80 per hour average contribution rate for all future years.

- For all projections with a successful partition (those required by Sections 4233.7(a)(5), and (8)), the contribution rate is assumed to increase by 1% per year beginning May 1, 2021.

Contribution Base Units

- For purposes of the critical and declining status certification required by Section 4233.7(a)(2), future hours were assumed to be 90,000 for all years. This assumption does not reflect a partition. The assumption was representative of expected average hours worked until insolvency.

- Most projections in the 2019 valuation report furnished pursuant to Section 4233.7(a)(1) assume 99,100 hours for all years, which was based on participant-level assumptions of 1,200 hours per current vested member and 650 hours per current non-vested member.

- For all other projections (other than those contained in the critical and declining status certification required by Section 4233.7(a)(2) and in prior valuation reports), hours worked for the plan year ending 4/30/2020 are assumed to be 103,100. This estimate derives from the 5/1/2019 valuation assumption of 99,100 hours with an additional 4,000 hours assumed for members who work less than 435 hours and do not become participants.

Subsequent years' hours are assumed to trend as follows:

- In scenarios without a partition (those required by Sections 4233.7(a)(3), (4), (7), (9) and (10)), hours were assumed to decline by 6% per year.

- In scenarios with a successful partition (those required by Sections 4233.7(a)(5) and (8)), hours were assumed to decline by 1% per year.

We realize that, under this set of assumptions, a given year might be projected to see one level of hours under the no-partition scenarios and a different level under the partition scenarios. A constant decline was assumed for computational simplicity. In reality, under scenarios with insolvency there is likely to be a larger decline at the year of insolvency. We believe a constant decline of 6% per year is reasonably similar to a lower decline before insolvency plus a shock decline in the insolvency year and then 6% declines after insolvency.

- For all projections other than the critical and declining status certification required by Section 4233.7(a)(2), individual (current) active participants were assumed to work 1,200 hours per year if they were vested and 650 hours per year otherwise. However, these numbers were pro-rated (within the valuation system) in order to conform the total hours worked by the entire population under the above assumptions. The assumed hours assumption for active participants was increased from the 2018 actuarial valuation based on an analysis of subsequent hours experience.

Future Benefit Accrual

No change in future benefit accrual was assumed even in the case of insolvency. Employers will still be obligated to contribute to the fund and will want to provide continued accrual. The current benefit formula for a member who works 1,200 hours annually provides a benefit of about $25.66 per year of service, which is significantly less than the maximum PBGC guarantee.

Withdrawal Liability Payment

No future withdrawal liability payments were assumed.

Administrative Expenses

- The basic schedule of assumed administrative expenses is as follows:

Period	Assumed Expenses
10/1/2019 through 4/30/2020	$250,000
Plan year ending 4/30/2021	$250,000
Plan year ending 4/30/2022	$115,000
On and after 5/1/2022	Prior year's assumption increased by 2.5%

- For scenarios with a partition, the annual expenses from the basic schedule above are increased by $10,000 to reflect the additional complexity of maintaining separate records for 2 plans. 50% of assumed expenses are assigned to the successor plan with such allocation decreasing 2% per year.

- For scenarios leading to insolvency, the annual expenses from the basic schedule above are decreased by $20,000 in the year immediately following insolvency to reflect decreased PBGC premiums and lower professional costs. The savings in the first year of insolvency are assumed to be offset by one-time costs at initial insolvency.

Rationale: Without fees for the 2016 suspension application or the initial stages of this partition application, recent administrative expenses have been between $100,000 and $110,000 annually, including PBGC premiums of approximately $12,000. The expected 2022 expenses reflect that level plus inflation.

Market Value of Assets as of 9/30/2019 data sources and adjustments

Unaudited assets as of 9/30/2019 were provided by the fund administrator. Audited assets as of 4/30/2019 were available from both the administrator and the auditor. We studied the differences between prior audited and unaudited financial statements and found that, historically, the differences in net market value have been small and have primarily involved payables and receivables. The administrator confirmed that no adjustments to these items are typically booked between audits. Our final value of net assets available for benefits as of 9/30/2019 was based on invested asset values provided by the administrator and receivable and payable amounts as of 4/30/2019. The development of the 9/30/2019 assets is shown in **Exhibit 7J** of this application

Projection Methodology

- The DBVal valuation system was used to perform all actuarial projections, unless otherwise disclosed. Additional calculations were performed using Microsoft Excel.

- As discussed above, for purposes of the certification of critical and declining status certification furnished under Section 4233.7(a)(2), "take up" rates of optional forms of benefit were not used.

- No data grouping techniques were used.

- The following changes to the cash flow projections were incorporated:

    - All included scenarios used pre-partition cash flows for actives from the 6% decline in hours scenario. We believe the modest difference in accrued benefits during the period 5/1/2020 through 9/30/2020 between the 1% and 6% decline scenarios has almost no impact on such cash flows.

    - Cash flows for actives and terminated vested participants prior to partition or insolvency were estimated based on runs with different assumed mortality since the period before insolvency is short and the impact is immaterial.

    - Inactive vested participants were processed in separate runs in order to properly value the desired retirement decrements. No pre-retirement withdrawal or disability rates were assumed for these runs.

    - For each plan design scenario, 3 active-only runs (one for each form of benefit), 3 inactive vested-only runs (one for each form of benefit), and one pay status run were done. The projected benefit payments from these runs were blended, along with projected benefits from assumed new entrants, to produce the final stream of benefit payments.

    - Benefit payments from the valuation system output are given as of the beginning of each plan year. These were multiplied by a one-half year interest adjustment factor to produce cash flows.

    - For purposes of the certification of critical and declining status required by Section 4233.7(a)(2), active participant cash flows from the valuation system were adjusted for contribution rate and total hours. Similar adjustment are also made for some of the graphs in the valuation reports furnished pursuant to Section 4233.7(a)(1). For all other purposes, these adjustments were handled within the valuation system.

Document 6A2

Supporting Documentation for Selection of Certain Assumptions

Investment Returns

- Components of the target portfolio used in the projections expressed in terms of the asset classes used for setting the plan's investment policy. Note that all of these asset classes are permissible asset classes as listed in Appendix B of Rev. Proc. 2017-43. The mix of assets is not projected to vary over time.

Asset Class	Target Allocation
US Large Cap	35%
US Small/Mid Cap	10%
Non-US Developed	18%
US Fixed - Core	30%
Treasuries/Cash	1%
Hedge Funds	6%

- Net investment return assumptions used for deterministic projections
  - The net investment return assumptions used for deterministic projections were based on:
    - The expected net returns, standard deviations, and correlations from the *Survey of Capital Market Assumptions: 2019 Edition* as detailed in Document 6A1. Short-term assumptions from the survey were assumed to apply to plan years ending prior to May 1, 2029 and the long-term assumptions were used thereafter.
    - The assumed investment allocations as described in the preceding section.
  - Portfolio returns were modeled using the preceding target asset allocation and capital market assumptions. The final short and long-term assumptions (shown below) were selected based on the observed median geometric average portfolio returns over a 10-year period for the short-term assumption and over a 20-year period for the long-term assumption.

	PYE 2020-2029	PYE 2030 and later
Assumed Interest Rate	5.75%	6.75%

- Since the capital market returns provided in response to the Horizon survey included the effects of inflation and were net of investment-related expenses, we did not employ an explicit inflation or investment expense assumption.

Demographic Experience

- Experience Studies

  UAS does not typically perform formal experience studies for our clients. We assess the appropriateness of assumptions by looking at 5-year histories of demographic experience (expected versus actual exits by cause) and aggregate liability gain or loss relative to the size of accrued liability.

  Due to the small size of the Plan we have provided 10 years of experience below even though 5 years were often used in assumption setting. If an assumption looks questionable, we perform an internal demographic experience study. The expected values in the tables below are relative to the assumption used for the valuation that year not to current assumptions. The size of this Plan means actual experience is not fully creditable and can be volatile.

  A 10-year history of demographic experience is provided below:

PYE 4/30:	Expected and Actual Exits From Active Status Due To:			
	Retirement		(Net) Withdrawal	
	Expected	Actual	Expected	Actual
2019	6.3	2	9.5	14
2018	4.7	2	6.6	(3)
2017	2.3	1	10.2	24
2016	0.9	3	14.3	36
2015	1.6	1	6.9	(8)
2014	2.0	5	9.8	24
2013	3.9	5	11.9	16
2012	2.2	1	12.1	6
2011	4.8	5	13.3	21
2010	2.3	4	10.9	13

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PYE 4/30:	Expected and Actual Deaths by Status					
	Actives		Inactive Vesteds		Retirees	
	Expected	Actual	Expected	Actual	Expected	Actual
2019	0.3	0	0.7	2	10.1	11
2018	0.2	1	0.6	0	9.8	11
2017	0.4	0	0.7	0	13.6	13
2016	0.3	0	0.5	0	11.4	10
2015	0.2	0	0.5	0	11.6	16
2014	0.3	0	0.6	0	11.4	11
2013	0.3	0	0.6	2	11.0	9
2012	0.3	0	0.7	1	9.7	10
2011	0.3	0	0.9	0	9.1	9
2010	0.3	0	0.8	1	8.4	6

- <u>Liability Gain/Loss Analysis</u>
  Liability gains/losses for the last 10 years, both as a dollar amount and as a percentage of accrued liability, are shown below. Keep in mind these gains and losses also include the impact of the assumed hours per member (i.e., the effect of benefit accruals for the plan year being greater or less than was assumed in the prior year's valuation report).

PYE 4/30:	Liability (Gain)/Loss	
	As $ Amount	As % of Liability
2019	$ 120,513	0.30%
2018	(186,836)	-0.48%
2017	1,075,847	2.95%
2016	821,780	2.26%
2015	(298,189)	-0.85%
2014	98,493	0.28%
2013	(35,147)	-0.10%
2012	93,534	0.27%
2011	143,822	0.41%
2010	515,601	1.49%

- <u>Percentage of Plan Population That Is Married</u>
  For the 10 plan years ending April 30, 2010-2019, 74 people commenced retirement benefits. Of these, 55, or 74.3%, were married and, on average, the male spouse was 2.5 years older than the female spouse. There were no same-sex married couples reported.

- <u>Distribution of Optional Form Elections</u>
  The distribution of optional form elections at retirement for the plan years ending April 30, 2010-2019 is shown below. Note that the life-five year certain and joint & 75% survivor options were not valued.

Benefit Form	Married Participants Electing	Single Participants Electing
Life annuity	52.73%	68.42%
Life-five year certain	7.27%	31.58%
Joint & 50% survivor	20.00%	0.00%
Joint & 75% survivor	3.64%	0.00%
Joint & 100% survivor	16.36%	0.00%

- <u>Rates of Retirement by Age</u>
  Retirement experience for <u>actives</u> based on the plan years ending April 30, 2010-2019 is summarized below:

Age	Exposure	Retirements	Rate
55	32	4	12.5%
56	28	3	10.7%
57	25	0	0.0%
58	23	1	4.3%
59	23	6	26.1%
60	16	5	31.3%
61	10	0	0.0%
62	10	8	80.0%
63	2	1	50.0%
64	2	0	0.0%
65	1	0	0.0%
66	2	1	50.0%
67	0	0	n/a
68	0	0	n/a
69	0	0	n/a
70	0	0	n/a
>70	0	0	n/a

Retirement experience for inactive vested participants based on the plan years ending April 30, 2010-2019 is summarized below. Note that the exposures for ages 55-64 do not include participants with less than 10 years of service as such participants are not eligible to retire early.

Age	Exposure	Retirements	Rate
55	13	0	0.0%
56	22	2	9.1%
57	18	3	16.7%
58	16	0	0.0%
59	11	1	9.1%
60	10	1	10.0%
61	6	2	33.3%
62	33	4	12.1%
63	40	3	7.5%
64	23	3	13.0%
65	14	6	42.9%
66	23	5	21.7%
67	12	1	8.3%
68	8	2	25.0%
69	8	2	25.0%
70	5	1	20.0%
>70	9	1	11.1%

Observation: Many of the retirements after age 62 were part of a one-time data clean up in 2015 and involved short service participants.

- Rates of Withdrawal by Age
  Withdrawal experience (net of rehires) for actives based on the plan years ending April 30, 2010-2019 is summarized below:

Age Range	Exposure (>2yrs svc)	Net Withdrawal	Rate
<20	0	0	0.0%
20-24	14	1	7.14%
25-29	58	12	20.69%
30-34	94	9	9.57%
35-39	131	16	12.21%
40-44	174	15	8.62%
45-49	211	8	3.79%
50-54	197	9	4.57%
55-59	23	6	26.09%
60+	13	1	7.69%

The above table includes only those participants with 3 years of service as of the valuation date. Experience in the first three years of employment is summarized below.

Service	Exposure	Net Withdrawal	Rate
0	7	1	14.29%
1	85	33	38.82%
2	91	32	35.16%

Mortality Assumptions

- Experience Study Underlying Mortality Rates
  The vast majority of participants in the plan are employed in the construction industry as a bricklayer. As such, they would be classified as blue collar workers. Therefore, we selected the blue collar tables of the *RP-2014 Mortality Tables Report* issued by the Society of Actuaries as the basis for the mortality assumption. We believe this table is representative of the expected mortality experience under the plan.

- Process Used to Construct Tables
  As we have selected the blue collar tables of the *RP-2014 Mortality Tables Report* issued by the Society of Actuaries as the basis for the mortality assumptions, we refer the reader to the text of this study for a detailed description of how the tables were constructed. The report can be found here:

  https://www.soa.org/globalassets/assets/files/research/exp-study/research-2014-rp-report.pdf

- Mortality Adjustments

  No adjustments were applied to the blue collar tables found in the RP-2014 study.

- Mortality Improvement

  We used the Society of Actuaries' MP-2018 improvement scales to project mortality rates generationally.

New Entrant Profile

- The distribution of ages of new entrants over the past 5 years appears below:

Age Range	Percentage of New Entrants for PYE 4/30:				
	2019	2018	2017[3]	2016	2015
<20	0.00%	16.67%	n/a	0.00%	3.03%
20-24	12.50%	8.33%	n/a	13.04%	9.09%
25-29	0.00%	16.67%	n/a	21.74%	9.09%
30-34	25.00%	16.67%	n/a	8.70%	24.24%
35-39	12.50%	16.67%	n/a	13.04%	3.03%
40-44	12.50%	0.00%	n/a	21.74%	15.15%
45-49	0.00%	8.33%	n/a	4.35%	15.15%
50-54	25.00%	8.33%	n/a	4.35%	6.06%
55-59	0.00%	0.00%	n/a	8.70%	12.12%
60+	12.50%	8.33%	n/a	4.35%	3.03%

- New entrants generally do not enter the plan with vesting or benefit service. This is because:

    - Reciprocity agreements are typically of the “money-follows-man” type, so participants generally cannot come in with vesting service earned in another plan that carries over to this Plan under a “pro-rata” reciprocity agreement.

    - If the plan is designated as a home fund under a money-follows-man agreement, the employee must first become a participant in the plan, so he/she would not be a new employee when contributions are transferred in.

    - Furthermore, contiguous non-covered service is extremely rare as the plan does not allow a termination to occur between the non-covered and covered service.

Contribution Base Units and Employer Withdrawals

- Employers That Contributed Over 5%
  Information on the employers that made more than 5% of total plan year contributions during the last 6 plan years (plan years ending April 30, 2014-2019) appears below. Note that contribution information by employer was not readily available for the preceding 4 years (2010-2013).

[3] There were no new entrants for the plan year ended 4/30/2017

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PYE 4/30:	Employer Name	Percent of Total [4]	Hours	Average Contribution Rate	Total Contribution
2019	Company A	26.56%	36,386	$6.81	247,722
2019	Company B	10.51%	14,363	$6.82	98,011
2019	Company C	7.04%	9,656	$6.80	65,661
2019	Company D	12.24%	16,782	$6.80	114,118
2019	Company E	7.05%	9,664	$6.80	65,715
2019	Company F	5.14%	7,050	$6.80	47,937
2018	Company A	22.26%	29,813	$6.80	202,727
2018	Company B	17.13%	22,787	$6.85	156,029
2018	Company C	8.63%	11,530	$6.81	78,559
2018	Company G	9.54%	12,672	$6.85	86,860
2018	Company H	6.13%	8,204	$6.80	55,784
2018	Company I	5.05%	6,744	$6.81	45,941
2017	Company A	5.31%	5,306	$6.75	35,828
2017	Company B	28.43%	28,078	$6.83	191,883
2017	Company F	5.61%	5,578	$6.78	37,840
2017	Company H	5.53%	5,490	$6.80	37,313
2017	Company J	5.25%	5,163	$6.86	35,412
2017	Company K	5.54%	5,500	$6.80	37,386
2017	Company L	5.31%	5,268	$6.80	35,822
2016	Company A	19.97%	29,081	$6.65	193,251
2016	Company B	14.75%	21,379	$6.68	142,763
2016	Company C	6.92%	9,860	$6.79	66,986
2016	Company F	7.01%	10,193	$6.65	67,831
2016	Company M	12.76%	19,000	$6.48	123,148
2015	Company B	12.45%	21,739	$6.53	141,893
2015	Company C	11.90%	20,286	$6.68	135,569
2015	Company E	5.68%	9,139	$7.08	64,733
2015	Company M	17.39%	30,745	$6.45	198,175
2015	Company N	10.56%	18,561	$6.48	120,335
2014	Company B	10.44%	13,672	$6.49	88,779
2014	Company D	11.16%	14,447	$6.57	94,923

[4] Percentages are of contributions made by local employers, excluding reciprocity.

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PYE 4/30:	Employer Name	Percent of Total [4]	Hours	Average Contribution Rate	Total Contribution
2014	Company J	20.27%	26,717	$6.45	172,401
2014	Company N	6.40%	8,464	$6.44	54,471
2014	Company O	12.58%	16,735	$6.39	106,982

- Historical Trends – Contribution Base Units (Hours)

PYE 4/30:	Net Hours	Regular Hrs	Recip IN Hrs	Recip OUT Hrs	3 Yr Avg	% Chg 3 Yr
2009	125,501					
2010	163,420					
2011	137,302				142,074	
2012	154,904				151,875	6.9%
2013	123,783				138,663	-8.7%
2014	99,661	131,877	21,899	54,115	126,116	-9.0%
2015	145,457	173,548	36,289	64,380	122,967	-2.5%
2016	135,899	145,141	40,171	49,413	127,006	3.3%
2017	91,547	98,979	33,537	40,969	124,301	-2.1%
2018	114,761	133,285	40,442	58,966	114,069	-8.2%
2019	112,776	136,906	34,736	58,866	106,361	-6.8%

Due to administration system changes, details of reciprocity activity are not available before 2014. The historical hours show a long term decline but also annual volatility. The volatility is typical of the project based nature of work in the construction industry. The long term decline includes one significant employer that went out of business in 2016. Years 2014 and 2017 had lower hours primarily due to a lack of major projects in the area in those years (i.e. normal project-based volatility). The gradual decline in hours from 2010 to 2013 was due in part to the large increase in required contributions during that period. It is also the period that saw the heaviest incidence of members moving their home local away from Local 7 due to those same increasing contributions.

- Historical Trends – Contribution Rates
Even before the 2008 great recession this Plan had funding concerns that had led to increases in contributions and decreases in benefits starting as early as 2003. Prior to 2006 the contribution rate had been $3.30 for a number of years. By 2013 the rate had increased to $6.41. Some of these increases were made as part of the rehabilitation plan and before the Plan decided to declare exhaustion of all reasonable measures. Over that 8-year period contributions almost doubled with an annualized increase of about 11.5%. Since 2013, contributions have increased to $6.80 a 6% increase over six years.

- Rationale for Hours Assumption

  See preceding table under the heading, "Historical Trends – Contribution Base Units (Hours)." The rolling 3-year averages of hours worked have steadily declined over the past 10 years. We believe the declining health of the plan (not the amount of work available or expected to be available) was the biggest single driver of this decline.

  Kent State University which is in the area of the fund has significant future plans for new buildings which will very likely include brick work. The Bureau of Labor Statistics recently showed brick and related trades as growing nationwide. The population of the counties in the geographic area covered by the Plan have remained fairly stable.

  If there is no partition we believe recent declines will continue. We estimate the average rate of decline will be approximately 6%, perhaps with slightly lower declines before insolvency and a bump at the time of insolvency.

  If the Plan can be stabilized with a Partition, the Board of Trustees expects they can stabilize hours and work at near the current level. For projections under the partition scenario, we determined that a modest future decline of, on average, 1% was more realistic to account for the possibility of sporadic loss of additional Employers or members continuing to transfer home locals occasionally.

  The Plan requires 435 hours for initial participation and does not give benefit credit for a year with less than 435 hours. Historically (see table below) there have been fairly significant aggregate levels of hours for individuals that each had less than 435 hours. We have set a future assumption of 4,000 such hours which is approximately 66% for the five year activity without adjustment for late reciprocity (see discussion above under approximations). The late reciprocity was actually often for members that worked over 435 hours so the values below would decrease by 500 hours or less per year if adjusted.

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Plan year ending	Number of Non-Participants with Hours	Total Hours by Non-Participants
4/30/2019	55	7,212.50
4/30/2018	39	4,144,50
4/30/2017	37	3,722.50
4/30/2016	47	5,866.25
4/30/2015	59	9,522.15

- <u>Rationale for Contribution Rate Assumption</u>
  The bargaining parties and Trustees are of the opinion that, historically, pension contribution rates increased too much and too quickly. They understand that the high contributions and low accrual rate will make it difficult to man jobs and retain qualified craftsmen. Furthermore, the high contribution rates make it difficult for signatory contractors to compete in the market place.

  However, over a long-term projection period we believe contribution rates will increase slowly at about half the rate of inflation. Therefore, we have assumed a 1% increase in rates starting in 2021. It should be noted that, in the previous suspension application (submitted in 2016 and subsequently withdrawn), the bargaining parties had agreed to contribution rate increases of 5¢/hour per year, which is slightly less than 1% of the initial rate. Finally, the current benefit formula provides for accrual at 1% on contributions in excess of $6.66 per hour, which provides incentive to allocate new contributions.

- <u>Experience with Employer Withdrawals</u>
  The Plan has collected no withdrawal liability in the last ten years. This is primarily due to the operation of the "construction industry exemption." In addition, the vast majority of contractors are working under statewide agreements that require contributions only when working in the area of each fund.

<u>Projection Methodology</u>

- <u>Changes to Cash Flow Projections</u>
  - Inactive vested participants were processed in separate runs in order to properly value the desired retirement decrements. This was done because our valuation system does not fully support inactive decrements.

  - For each plan design scenario, 3 active-only runs (one for each form of benefit being valued), 3 inactive vested-only runs (one for each form of benefit being valued), and one pay status run were done. The projected benefit payments from these runs were blended, along with projected benefits from assumed new entrants, to produce the final stream of benefit payments. This was done because our valuation system does not allow the user to assume multiple forms of benefit payment in a single run.

- Benefit payments from the valuation system output are given as of the beginning of each plan year. These were multiplied by a one-half year interest adjustment factor to produce cash flows. We think it is more intuitive to work with cash flows rather than interest-adjusted cash flows. Additionally, all benefit payments produced by the valuation system are discounted at the valuation interest rate, whereas, when projecting assets, various rates of interest are applied.

- For purposes of the certification of critical and declining status required by Section 4233.7(a)(2), active participant cash flows from the valuation system were adjusted for contribution rate and total hours. The certification of critical and declining status was done before work on this filing had commenced and we had not yet developed code to handle this adjustment internally.

Document 6A3

Additional Disclosures Relating to the Use of Different Assumptions

Explanation of differences between assumptions used for the actuarial valuation reports required to be furnished by Section 4233.7(a)(1) and the critical and declining certification required by Section 4233.7(a)(2) versus assumptions used for other projections contained in this application.

- The short- and long-term interest rates used for the critical and declining certification are 6.0% and 7.0%, respectively, whereas interest rates of 5.75% and 6.75% were used for the other projections contained in this filing. When the certification of critical and declining status was completed, the 2019 Horizon survey was not yet published. After performing portfolio projections using the 2019 survey, we decided to lower both the short- and long term rates by 25 basis points each.

- For purposes of the critical and declining certification, the assumed "take-up" rate for benefit form election was 100% electing a single life annuity. The other projections contained herein use an explicit "take-up" assumption assigning various probabilities to the 3 valued forms of benefit. When the certification was completed, it was based on the 2018 actuarial valuation report, which used the single form. We felt that it was not necessary to incorporate the explicit approach because the difference is not material over the short period of time until projected insolvency.

- The plan provides that, unless a participant explicitly waives pre-retirement death benefit coverage, such coverage will be "paid for" via a reduction in the participant's accrued benefit. For purposes of the critical and declining certification, projections assumed no pre-retirement death benefit coverage (implicitly assuming that any pre-retirement death benefits would be offset by the associated reduction in accrued benefits). For all other projections contained herein (including the 2019 valuation report furnished pursuant to Section 4233.7(a)(1)), an explicit married percentage of 75% is assumed and all married participants are assumed to elect pre-retirement death coverage.

- For purposes of the valuation reports and the critical and declining certification, current inactive vested participants are assumed to retire at age 59 if they have at least 10 years of service, or age 62 if less than 10 years of service. For other projections, retirement rates are used to value a distribution of benefit commencement ages for inactive vested participants. We felt that it was not necessary to incorporate the explicit approach when preparing the critical and declining certification because the difference is not material over the short period of time until projected insolvency.

- For purposes of the critical and declining certification, we did <u>not</u> take into account any increased expenses due to the partition application, nor did we assume any future inflation in expenses. At the time the critical and declining certification was prepared, we did not have a final agreement to proceed with the partition application. When preparing this filing we decided it would be more appropriate to increase the 2019-2020 expense level to reflect these additional costs and to include a future inflation adjustment in our expense assumption.

- The third-period select withdrawal rate was updated from the 20% used in the critical and declining certification to 35% as used in other projections contained herein. This change was made based on an updated study of recent experience performed with the 5/1/2019 actuarial valuation.