

***Via Electronic Mail***

March 16, 2020

Ms. Joanna M. Adams  
 Pension Administrator  
 Delaware Public Employees' Retirement System  
 McArdle Building  
 860 Silver Lake Boulevard  
 Suite 1  
 Dover, Delaware 19904

***Re: Diamond State Port Corporation Pension Plan June 30, 2019 Actuarial Valuation - Revised***

Dear Joanna:

We have completed our actuarial valuation of the 293 members remaining in the Diamond State Port Corporation Pension Plan as of June 30, 2019. Our results are as follows.

Valuation as of:	Valuation Results	
	June 30, 2018	June 30, 2019
Actuarial Liability (AL)	\$ 34,492,700	\$ 33,995,200
Actuarial Value of Assets (AVA)	<u>33,348,100</u>	<u>33,259,000</u>
AVA Unfunded AL (UAL)	\$ 1,144,600	\$ 736,200
Funded Ratio on AVA (AVA/AL)	96.7%	97.8%
Market Value of Assets (MVA)	33,601,500	32,870,000
Funded Ratio on MVA (MVA/AL)	97.4%	96.7%
Present Value Accumulated Plan Benefits (PVAB)	\$ 34,492,700	\$ 33,995,200
MVA	<u>33,601,500</u>	<u>32,870,000</u>
Unfunded PVAB on MVA	\$ 891,200	\$ 1,125,200
Accrued Benefit Funded Ratio (MVA/PVAB)	97.4%	96.7%

The actuarial value of assets is a smoothed asset value that recognizes 20% of the difference between the expected actuarial value and the market value of assets. The expected actuarial value equals the prior year's actuarial value adjusted with contributions, payments, and investment earnings of 7.0%, the assumption as of last year's valuation date. This method tempers the volatile fluctuations in market value.

For this plan, the funding method develops an actuarially determined dollar amount determined by each valuation for the fiscal year ending two years after the valuation date, composed of an unfunded actuarial liability contribution (UAL contribution) and an administrative expense contribution. The resulting contribution amount is \$208,600 (including a margin for expenses) for fiscal year (FY) 2021 developed as shown in the following table along with the development of the FY 2020 amount.

Employer Contribution Rate		
	Fiscal Year 2020	Fiscal Year 2021
UAL Amortization Payment	\$ 269,900	\$ 173,600
Administrative Expense	<u>40,100</u>	<u>35,000</u>
Actuarially Determined Contribution (ADC)	\$ 310,000	\$ 208,600

The UAL amortization payment amount is calculated by amortizing this UAL over a closed five-year period beginning with FY 2021 with equal payments assumed for each of the five years. The expense contribution is determined based upon review of recent years, currently set at \$35,000. This assumption will be reconsidered annually, allowing reflection of experience emerging of the expenses following the Plan's freeze.

### **Data and Assumptions**

In completing the valuation and preparing our report, we relied on information, some oral and some written, supplied by staff of the Office of Pensions. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

We found the data to be reasonably consistent and comparable with data used in the prior valuation. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

Appendix A outlines the actuarial assumptions used. Appendix B contains a summary of the data, and Appendix C contains the risk and accounting disclosure information.

The actuarial liability was based on a 7.00% net investment return and mortality tables as outlined in Appendix A.

We believe these assumptions reflect our best estimate of anticipated future experience of the Plan. Our results are dependent upon future experience conforming to these assumptions. It is certain that actual experience will not conform exactly to these assumptions. Actual amounts will differ from projected amounts to the extent actual experience differs from expected experience.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations, including the use of assumptions and methods for funding purposes that comply with the Actuarial Standards of Practice. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

Ms. Joanna M. Adams

March 16, 2020

Page 3

This report was prepared for the Diamond State Port Corporation Pension Plan for the purposes described herein and for the use by the Plan's auditor in completing an audit related to the matters herein. Other users of this valuation report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Sincerely,  
Cheiron



Fiona E. Liston, FSA, MAAA, EA  
Principal Consulting Actuary



Elizabeth Wiley, FSA, FCA, MAAA, EA  
Consulting Actuary

Attachments

**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX A – ACTUARIAL ASSUMPTIONS**

**A. Long-Term Assumptions Used to Determine Plan Costs and Liabilities**

**1. Demographic Assumptions**

**a. Rates of Mortality**

Mortality rates are based on the sex-distinct employee, healthy annuitant, and disabled annuitant mortality tables described below, including adjustment factors applied to the published tables for each group. Future mortality improvements are reflected by applying a custom projection scale on a generational basis to adjusted base tables from the base year shown below.

**i. Sample Rates of Mortality for Healthy Annuitant Lives at Selected Ages (number of deaths per 10,000 members):**

(2019 Values Shown)		
Age	Male	Female
50	43	26
55	60	35
60	82	51
65	116	79
70	180	126
75	293	207
80	494	350
85	862	623
90	1,530	1,121
95	2,432	1,857
100	3,484	2,783

Rates are based on 110% and 100% of the RP-2014 Total Dataset Healthy Annuitant Mortality Table, respectively, for males and females, using the RP-2014 Total Dataset Employee Mortality Table for ages prior to start of the Healthy Annuitant Mortality Table, both projected from the 2006 base rates using the RPEC-2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0% for ages 115-120, and convergence to the ultimate rate in the year 2020. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.

**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX A – ACTUARIAL ASSUMPTIONS**

**ii. Sample Rates of Mortality for Disabled Annuitant Lives at Selected Ages  
(number of deaths per 10,000 members):**

(2019 Values Shown)		
Age	Male	Female
25	90	27
30	86	34
35	102	48
40	122	65
45	190	102
50	233	135
55	268	170
60	306	202
65	365	245
70	473	333
75	647	488
80	923	737
85	1,375	1,116
90	2,125	1,666
95	3,000	2,438
100	3,955	3,430

Rates are based on 120% of the RP-2014 Total Dataset Disabled Annuitant Mortality Table, projected from the 2006 base rates using the RPEC-2015 model, with an ultimate rate of 0.85% for ages 20-85, grading down to an ultimate rate of 0% for ages 115-120, and convergence to the ultimate rate in the year 2020. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.

**2. Economic Assumptions**

- a. Investment Rate of Return: 7.00%
- b. Annual Assumed Cost-of-Living Increase Rate for Retirees: 0.00%
- c. Administrative Expenses Assumed: \$35,000 annually based on review of recent actual history

**3. Rationale for Assumptions**

The assumptions were adopted by the Board of Trustees upon the recommendation of the actuary, based on an experience study review performed in 2016 and covering the period July 1, 2010 to June 30, 2015. The Board continually reviews the investment rate of return assumption and adopted a reduced rate of 7.0% at the advice of its investment consultants, first effective for funding with the 2017 valuation.

**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX A – ACTUARIAL ASSUMPTIONS**

**4. Changes since Last Valuation and Rationale for Changes**

Administrative expenses assumption was changed from equaling the prior year's expenses to being set based on a review of multiple years of recent history. This change was made to reflect the fact that it seems likely expenses were increased during the freeze and it is not expected that these increases will recur in FY 2021.

**B. Actuarial Methods**

**1. Funding Method**

As a frozen plan, the actuarial liability for the Plan is the present value of projected benefits. The difference between this liability and the funds accumulated as of the same date is referred to as the unfunded actuarial liability.

The unfunded liability is amortized over a closed five-year period beginning with the FY 2021 contribution as a level dollar amount. This method was chosen to reflect the characteristics of a frozen plan.

In addition to the unfunded liability amortization payment, a contribution for expected benefits is also determined.

**2. Actuarial Value of Assets**

For purposes of determining the employer contribution amount to the Plan, we use an actuarial value of assets. The asset smoothing method dampens the volatility in asset values anticipated because of market condition fluctuations. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process.

The actuarial value of assets for this plan is a weighted average giving 20% weight to the current market value and 80% weight to the prior year's actuarial value increased by expected interest and contributions and decreased by benefit payments and expenses. This is mathematically equivalent to recognizing 100% of the actuarially assumed interest rate, plus contributions and less payments each year, and 20% of the portion of each year's returns that have not already been reflected in the actuarial asset values.

**3. Changes since Last Valuation and Rationale for Changes**

None

**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX B – DATA SUMMARY**

<b>Data Summary</b>			
	<b>Count</b>	<b>Average Age</b>	<b>Average Monthly Benefit</b>
Healthy Retirees	135	68	\$1,347.48
Disabled Retirees	6	65	1,233.86
Beneficiaries	24	66	734.13
Terminated Vested	128	52	944.66

## APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION

### **Risk Disclosure**

Actuarial Standard of Practice (ASOP) No. 51 provides guidance to actuaries regarding assessment and disclosure of risks related to the possibility that actual future measurements of pension plans will deviate from the expected future measurements developed in valuations of them. This standard does not introduce new concepts to actuarial work, it simply attempts to provide some codification of the practice. This ASOP is first effective for this current June 30, 2019 Actuarial Valuation Report. The following discloses the key risks faced by this, closed, plan.

### **Historical Experience**

Given the recent freezing of the Plan, the historical experience of this plan is of limited applicability, but the three most significant sources of deviations of actual results from expected for this plan in recent years have been assumption and method changes, investment gain/(loss), and liability gain/(loss). For historical information we refer you to the accounting disclosures which follow.

### **Risk Identification**

Considering the specific characteristics of the Plan, the assumptions and methods used in the actuarial valuations for the Plan, and the recent freezing of this plan, we have identified the risks that we think are the most significant in terms of possibly leading to actual values of the measurements deviating from those expected by the valuation process, as follows:

- Investment risk,
- Longevity and other demographic risk, and
- Assumption change risk.

*Investment Risk* is the potential for investment returns to be different than anticipated. In the case of this plan, that is the risk that the returns on assets will be materially different from the 7.0% that is currently assumed. If actual investment returns are lower than anticipated by the assumptions used in the actuarial valuation, this will increase the unfunded liability measurements and require higher contributions in the future than if the actual returns equaled the assumed returns.

*Longevity and Other Demographic Risk* is the potential for mortality or other demographic experience to be different than expected. Generally, longevity and other demographic risks emerge slowly over time as the actual experience deviates from expected and is typically periodically reduced through the Plan's regular actuarial experience process. As this plan is now frozen, the only source of demographic risk is longevity experience.



**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION**

*Assumption Change Risk* is the potential for the environment to change such that future valuation assumptions are different than the current assumptions. For example, a reduction in the assumed rate of return would result in a higher measurement of the Plan's liability.

**More Detailed Assessment**

A more detailed assessment is always valuable to enhance the understanding of the risks identified above; however, the value of this must be compared alongside the costs of such an exercise. The costs in this case are both measureable costs as expressed by the actuarial fees for the additional assessment and the cost of staff time required to support the effort and more intangible costs such as the additional information potentially drowning out the principle findings from the valuation and overwhelming decision makers.

Whether or not to have a more detailed risk assessment performed at this time is the Board's decision, but we do not believe that this additional risk assessment is required at this time based on our understandings of the Board's priorities.

**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION**

**Accounting Statement Information**<sup>[AD1]</sup>

Statement No. 67 of the Governmental Accounting Standards Board (GASB) establishes standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in notes to financial statements and supplementary information.

This letter contains information reported in the June 30, 2019 Comprehensive Annual Financial Report (CAFR) of Delaware PERS under GASB Statement No. 67. Disclosures are based on the use of updated procedures to roll forward the 2018 funding valuation results. The calculation of Net Pension Liability on the following page shows the amounts to be disclosed for FY 2019, based on the liabilities of the roll forward of the 2018 funding valuation, as well as a projection of the anticipated FY 2020 disclosures, based on liabilities from the 2019 funding valuation, assuming all actuarial assumptions are met over the coming year. The actual disclosures for FY 2020 will be developed once the asset measure for GASB as of June 30, 2020 is known.

The remaining tables in this section are exhibits to be used for the System's CAFR. These tables include the Note to Required Supplementary Information; the Analysis of Financial Experience, which is a history of gains and losses in accrued liability; and the Schedule of Funded Liabilities by Type, which shows the portion of accrued liability covered by the actuarial value of assets. The Government Finance Officers Association (GFOA) has named this exhibit the Schedule of Funded Liabilities by Type. None of the liabilities or assets shown is appropriate for settlement purposes. Furthermore, the Schedule of Funded Liabilities by Type does not accurately depict a plan's future financial condition but rather is a test developed by the GFOA to assess the level of funding that relies on the contributions for future hires to pay for the benefits that have already been accrued by the current population. This valuation does not contain the additional disclosures required by GASB Statement No. 68 only for the employer's CAFR.

**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION**

<b>GASB No. 67 Disclosures</b>		
	<b>June 30, 2019</b>	<b>Estimated June 30, 2020</b>
<b><u>Total Pension Liability (TPL)</u></b>		
Service cost	\$ 0	\$ 0
Interest	2,600,000	2,293,000
Changes in benefit terms	(4,181,000)	0
Differences between expected and actual experience	763,000	(262,000)
Changes in assumptions	0	0
Benefit payments, including refunds of member contributions	(2,562,000)	(2,525,000)
<b>Net change in TPL</b>	<b>\$ (3,380,000)</b>	<b>\$ (494,000)</b>
<b>TPL - beginning</b>	<b>\$ 37,637,000</b>	<b>\$ 34,257,000</b>
<b>TPL - ending (a)</b>	<b>\$ 34,257,000</b>	<b>\$ 33,763,000</b>
<b><u>Fiduciary Net Position (FNP)</u></b>		
Contributions - State	\$ 305,000	\$ 310,000
Contributions - Non-employer	0	0
Contributions - Member	64,000	0
Net investment income	1,518,000	2,223,000
Benefit payments, including refunds of member contributions	(2,562,000)	(2,525,000)
Administrative expenses	(56,000)	(40,000)
<b>Net change in FNP</b>	<b>\$ (731,000)</b>	<b>\$ (32,000)</b>
<b>FNP - beginning</b>	<b>\$ 33,601,000</b>	<b>\$ 32,870,000</b>
<b>FNP - ending (b)</b>	<b>\$ 32,870,000</b>	<b>\$ 32,838,000</b>
<b>Net Pension Liability/(Asset) - ending [(a)-(b)]</b>	<b>\$ 1,387,000</b>	<b>\$ 925,000</b>

Items printed in red will be replaced with actual amounts once known at the end of FY 2020.

**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION**

**Note to Required Supplementary Information**

The June 30, 2019 total pension liability presented in GASB No. 67 Disclosures was determined as part of the measurement at the date indicated. Additional information as of the latest measurement date follows:

Measurement date:	July 1, 2019
Valuation date:	July 1, 2018
Actuarial cost method:	Entry age normal
Actuarial assumptions:	
Investment rate of return*	7.0%
Projected salary increases*	2.5% plus merit component based on service [AD2]
Cost-of-living adjustments	ad hoc
* Includes inflation at	2.50%

The actuarially determined contribution for fiscal year 2021 will use the contribution amount developed on the first page of this valuation. It was determined using the measurement date and key assumptions that follow:

Measurement date:	July 1, 2019
Valuation date:	July 1, 2019
Actuarial cost method:	Entry age normal
Amortization method:	Level dollar closed
Amortization period:	5 years
Asset valuation method:	Smoothed market, 20% annual market weight
Actuarial assumptions:	
Investment rate of return*	7.0%
Projected salary increases*	N/A
Cost-of-living adjustments	ad hoc
* Includes inflation at	2.50%

The actuarial assumptions used have been recommended by the actuary and adopted by the Plan's Board of Trustees based on the most recent review of the Plan's experience completed in 2016. The economic assumptions were updated first effective with the 2017 valuation based on the Board's annual review of these assumptions.

The total amount of employer contributions to the Plan is composed of the unfunded actuarial liability amortization payment and the administrative expenses. Because there are no future accruals in this plan, the actuarial liability is equal to the present value of benefits. The difference between this liability and the funds accumulated as of the same date is the unfunded actuarial liability. The allowance for administrative expenses is based upon the Plan's actual administrative expenses.

**DIAMOND STATE PORT CORPORATION PENSION PLAN  
ACTUARIAL VALUATION AS OF JUNE 30, 2019**

**APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION**

**Accounting Disclosures**

**Analysis of Financial Experience**

**Gain and Loss in Accrued Liability During Years Ended June 30  
Resulting from Differences between Assumed Experience and Actual Experience**

*Gain (or Loss) for Year Ending June 30,*

*(expressed in thousands)*

<b>Type of Activity</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Investment Income on Actuarial Assets	\$ 374	\$ 44	\$ (426)	\$ (162)	\$ 63	(97)
Combined Liability Experience	<u>(1,403)</u>	<u>662</u>	<u>975</u>	<u>(265)</u>	<u>3,552</u>	<u>262</u>
(Loss)/Gain during Year from Financial Experience	\$ (1,029)	\$ 706	\$ 549	\$ (427)	\$ 3,615	165
Non-Recurring Items	<u>(361)</u>	<u>0</u>	<u>873</u>	<u>(815)</u>	<u>0</u>	<u>0</u>
Composite Gain (or Loss) during Year	\$ (1,390)	\$ 706	\$ 1,422	\$(1,242)	\$ 3,615	165

**Schedule of Funded Liabilities by Type  
Aggregate Accrued Liabilities for**

*(expressed in thousands)*

<b>Valuation Date June 30,</b>	<b>Active Member Contributions</b>	<b>Retirees &amp; Beneficiaries</b>	<b>Active Member State-Financed Contributions*</b>	<b>Actuarial Value of Reported Assets</b>	<b>Portion of Accrued Liabilities Covered by Reported Assets</b>		
					<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
2019	\$ 0	\$ 25,488	\$ 8,507	\$ 33,259	100	100%	91
2018	0	24,678	9,407	33,348	100	100	92
2017	4,719	9,087	21,276	30,687	100	100	79
2016	4,374	7,882	19,381	28,341	100	100	83
2015	3,975	7,387	19,766	26,263	100	100	75
2014	3,906	5,980	19,523	23,955	100	100	72

\* Includes terminated vested members not yet in pay status.