Via Electronic Mail

December 27, 2023

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, 2023 Actuarial Valuation

Dear Joanna:

We have completed our actuarial valuation of the 283 members remaining in the Diamond State Port Corporation Pension Plan as of June 30, 2023. Our results are as follows.

Valuation Results		
Valuation as of:	**June 30, 2022**	**June 30, 2023**
Actuarial Liability (AL)	$ 33,797,200	$ 33,067,700
Actuarial Value of Assets (AVA)	34,903,700	34,493,600
AVA Unfunded AL (UAL)	$ (1,106,500)	$ (1,425,900)
Funded Ratio on AVA (AVA/AL)	103.3%	104.3%
Market Value of Assets (MVA)	35,175,500	34,192,700
Funded Ratio on MVA (MVA/AL)	104.1%	103.4%
Present Value Accumulated Plan Benefits (PVAB)	$ 33,797,200	$ 33,067,700
MVA	35,175,500	34,192,700
Unfunded PVAB on MVA	$ (1,378,300)	$ (1,125,000)
Accrued Benefit Funded Ratio (MVA/PVAB)	104.1%	103.4%

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 zero for fiscal year (FY) 2025 developed as shown in the following table along with the development of the FY 2024 amount.

Employer Contribution Rate	Fiscal Year 2024	Fiscal Year 2025
UAL Amortization Payment	$ (591,600)	$ (336,200)
Administrative Expense	23,900	27,500
Actuarially Determined Contribution (ADC)	$ 0	$ 0

For years from the closure of this plan through the calculation of the FY 2024 contribution rate, the UAL has been amortized over a closed five-year period with two years remaining as of FY 2024. Beginning with the FY 2025 contribution that is determined by this June 30, 2023 valuation, the UAL amortization period is being reset to a five-year period and this period will be fixed until such a time as the closed plan may again become underfunded. The expense contribution is determined based on the previous year's allocation of administrative expenses.

Data and Assumptions

In completing the valuation and preparing our report, we relied on information, some oral and some written, supplied by the 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.

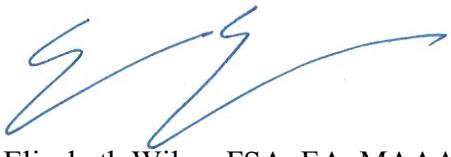
We believe these assumptions reflect our best estimate of anticipated future experience of the Plan. Our results are dependent upon future experience conforming to these assumptions. It is certain that actual experience will not conform exactly to these assumptions. Actual amounts will differ from projected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

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, EA, MAAA
Principal Consulting Actuary



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

Attachments

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 Terminated Vested Healthy Lives at Selected Ages (number of deaths per 10,000 members):

(2023 Values Shown)		
Age	Male	Female
25	3	1
30	5	2
35	7	3
40	9	4
45	10	5
50	14	8
55	21	13
60	33	20
65	47	28
70	65	43
75	98	72
80	156	123

Rates are based on 100% of the Pub-2010 General Employee Mortality Table, for males and females, using the Pub-2010 General Benefits Weighted Healthy Annuitant Mortality Table rates after the end of the Employee Mortality Table, both projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 0.85% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses a fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.

APPENDIX A – ACTUARIAL ASSUMPTIONS

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

(2023 Values Shown)		
Age	Male	Female
50	30	21
55	44	29
60	68	40
65	98	58
70	151	94
75	255	167
80	461	311
85	850	591
90	1,482	1,107
95	2,314	1,808
100	3,331	2,724

Rates are based on 107% and 100% of the Pub-2010 General Benefits Weighted Healthy Annuitant Mortality Table, respectively, for males and females, using the Pub-2010 General Employee Mortality Table for ages prior to start of the Healthy Annuitant Mortality Table, both projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 0.85% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses a fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.

APPENDIX A – ACTUARIAL ASSUMPTIONS

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

(2023 Values Shown)		
Age	Male	Female
25	36	22
30	54	38
35	74	59
40	91	79
45	113	102
50	160	147
55	218	188
60	277	218
65	328	228
70	386	268
75	496	377
80	710	588
85	1,071	942
90	1,642	1,396
95	2,387	1,965
100	3,331	2,887

Rates are based on 107% and 106% of the Pub-2010 General Benefits Weighted Disabled Annuitant Mortality Table, respectively, for males and females, projected from the 2010 base rates using the RPEC-2020 model, with an ultimate rate of 0.85% for ages 20-80, grading down to an ultimate rate of 0% for ages 114-120, and convergence to the ultimate rate in the year 2027. The valuation uses a 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: Assume following year's expense will equal allocation of administrative expenses made in prior year

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 2021 and covering the period July 1, 2015 to June 30, 2020. 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. We find the investment return assumption to be reasonable based on the System's current asset allocation and the capital market outlook of the Delaware Office of the State Treasurer and Cash Management Policy Board.

APPENDIX A – ACTUARIAL ASSUMPTIONS

4. Disclosures Regarding Models Used

In accordance with Actuarial Standard of Practice (ASOP) No. 56 *Modeling*, the following disclosures are made:

a. Valuation Software

Cheiron utilizes ProVal, an actuarial valuation software program leased from Winklevoss Technologies (WinTech), to calculate liabilities and projected benefit payments. We have reviewed the underlying workings of this model to the degree feasible and consistent with ASOP No. 56 and believe them to be appropriate for the purposes of the valuation.

5. Disclosure for Reasonable Actuarially Determined Contribution Method (ADC)

The rate determined in this valuation meets the requirements of a reasonable ADC as defined by the Actuarial Standards of Practice. The actuarial methods used to determine the reasonable ADC have been selected to balance benefit security, intergenerational equity, and stability of contributions. The selection of the actuarial methods has taken into account the demographics of plan members, the funding goals and objectives of the Board, and the need to accumulate assets to make benefit payments when due.

6. Changes Since Last Valuation and Rationale for Changes

None

APPENDIX A – ACTUARIAL ASSUMPTIONS

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.

For years from the closure of this plan through the calculation of the FY 2024 contribution rate, the UAL has been amortized over a closed five-year period. Beginning with the FY 2025 contribution, that is determined by this June 30, 2023 valuation, the UAL amortization period is being reset to a five-year period and this period will be fixed until such a time as the closed plan may again become underfunded. The expense contribution is determined based on the previous year's allocation of administrative expenses.

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

Beginning with the calculation of the FY 2025 contribution in this valuation, the UAL amortization period is being reset to an open five-year period. The rationale for this change is that the initial five-year closed period had declined to one year which could give rise to large variations in the future if plan experience creates a positive UAL amount. Using an open five-year period will still produce a zero net contribution this year, as the plan is significantly overfunded. Should the plan become less than 100% funded in the future, the five-year period can again be closed until the underfunding has been addressed.

APPENDIX B – DATA SUMMARY

Data Summary			
	Count	Average Age	Average Monthly Benefit
Healthy Retirees	139	69	$ 1,354.46
Disabled Retirees	5	67	$ 1,277.35
Beneficiaries	37	65	$ 716.85
Terminated Vested	102	55	$ 817.29

APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION

Risk Disclosure

The Plan's actuarial valuation results are dependent upon assumptions about future economic and demographic experience. Based on the actuarial standards of practice, the assumptions represent a reasonable estimate for future experience. However, actual future experience will never conform exactly to the assumptions and may differ significantly from the assumptions. This deviation is the risk that pension plan sponsors undertake in relying on a pension plan's actuarial valuation results.

This section of this report is intended to identify the primary drivers of these risks, provide background information and assessments about these identified risks, and communicate the significance of these risks to this 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 fact that this is a frozen 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. The Plan is currently using a short amortization period, which could exacerbate this risk.

The System invests in a diversified portfolio with the objective of maximizing investment returns at a reasonable level of risk. The lowest risk portfolio for a pension plan would be composed entirely of low-default-risk fixed income securities whose cash flows match the benefit cash flows of the System. Such a portfolio, however, would have a lower expected rate of return than the diversified portfolio. The Low-Default Risk Obligation Measure (LDROM) represents what

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the Present Value Accumulated Plan Benefits would be if the System invested its assets in such a portfolio. As of June 30, 2023, we estimate that a portfolio representative of the Financial Times Stock Exchange (FTSE) Pension Liability index would have an expected return of 5.00% rounded to the nearest 0.25%, compared to the System's discount rate of 7.00%, and the LDROM would be $40.0 million compared to the Present Value Accumulated Plan Benefits of $33.1 million. The $6.9 million difference represents the expected taxpayer savings from bearing the risk of investing in the diversified portfolio. Alternatively, it also represents the cost of eliminating the investment risk.

If the System were to invest in the LDROM portfolio, the reported funded status would decrease, and contribution requirements would increase. Benefit security for members of the plan relies on a combination of the assets in the System, the investment returns generated on those assets, and the promise of future contributions. If the System were to invest in the LDROM portfolio, it would not change the amount of assets currently in the System, but it would reduce expected future investment returns and potentially require future contributions. However, the range of future investment returns needed would narrow significantly.

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.

Assumption Change Risk is the potential for the environment to change such that future valuation assumptions are adjusted to be 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 measurable 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 principal 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 understanding of the Board's priorities.

APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION

Accounting Statement Information

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, 2023 Annual Comprehensive Financial Report (ACFR) of Delaware PERS under GASB Statement No. 67. Disclosures are based on the use of updated procedures to roll forward the 2022 funding valuation results. The calculation of Net Pension Liability on the following page shows the amounts to be disclosed for FY 2023 based on the liabilities of the roll forward of the 2022 funding valuation, as well as a projection of the anticipated FY 2024 disclosures based on liabilities from the 2023 funding valuation, assuming all actuarial assumptions are met over the coming year. The actual disclosures for FY 2024 will be developed once the asset measure for GASB as of June 30, 2024 is known.

The remaining tables in this section are exhibits to be used for the System's ACFR. 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 ACFR.

APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION

GASB No. 67 Disclosures		
	June 30, 2023	Estimated June 30, 2024
Total Pension Liability (TPL)		
Service cost	$ 0	$ 0
Interest	2,274,000	2,221,000
Changes in benefit terms	0	0
Differences between expected and actual experience	(592,000)	(345,000)
Changes in assumptions	0	0
Benefit payments, including refunds of member contributions	(2,658,000)	(2,720,000)
Net change in TPL	**$ (976,000)**	**$ (843,000)**
Es		
TPL – beginning	**$ 34,389,000**	**$ 33,413,000**
TPL - ending (a)	**$ 33,413,000**	**$ 32,569,000**
Fiduciary Net Position (FNP)		
Contributions – State	$ 0	$ 0
Contributions - Non-employer	0	0
Contributions – Member	0	0
Net investment income	1,704,000	2,301,000
Benefit payments, including refunds of member contributions	(2,658,000)	(2,720,000)
Administrative expenses	(28,000)	(24,000)
Net change in FNP	**$ (982,000)**	**$ (443,000)**
FNP – beginning	**$ 35,175,000**	**$ 34,193,000**
FNP - ending (b)	**$ 34,193,000**	**$ 33,750,000**
Net Pension Liability/(Asset) - ending [(a)-(b)]	**$ (780,000)**	**$ (1,181,000)**

Items printed in red will be replaced with actual amounts once known at the end of FY 2024.

APPENDIX C – RISK AND ACCOUNTING DISCLOSURE INFORMATION

Note to Required Supplementary Information

The June 30, 2023 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, 2023
Valuation date:	July 1, 2022
Actuarial cost method:	Entry age normal
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 actuarially determined contribution for fiscal year 2025 will use the contribution amount developed on the second page of this valuation. It was determined using the measurement date and key assumptions that follow.

Measurement date:	July 1, 2023
Valuation date:	July 1, 2023
Actuarial cost method:	Entry age normal
Amortization method:	Level dollar open
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 2021. 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.

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)					
Type of Activity	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Investment Income on Actuarial Assets	$ 63	$ (97)	$ 78	$ 2,054	$ 68	$ (75)
Combined Liability Experience	3,552	262	(211)	(808)	592	346
(Loss)/Gain during Year from Financial Experience	$ 3,615	$ 165	$ (133)	$ 1,246	$ 660	$ 271
Non-Recurring Items	0	0	0	(524)	0	0
Composite Gain (or Loss) during Year	$(1,242)	$ 3,615	$ (133)	$ 722	$ 660	$ 271

Schedule of Funded Liabilities by Type
Aggregate Accrued Liabilities for

(expressed in thousands)

Valuation Date June 30,	Active Member Contributions (1)	Retirees & Beneficiaries (2)	Active Member State-Financed Contributions* (3)	Actuarial Value of Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets (1)	(2)	(3)
2023	$ 0	$ 26,666	$ 6,402	$ 34,494	N/A	100%	122%
2022	0	27,004	6,793	34,904	N/A	100	116
2021	0	27,152	7,576	34,969	N/A	100	103
2020	0	26,031	7,849	33,251	N/A	100	92
2019	0	25,488	8,507	33,259	N/A	100	91
2018	0	24,678	9,407	33,348	N/A	100	92

* Includes terminated vested members not yet in pay status.