



BARTEL
ASSOCIATES, LLC

**Alaska Railroad Corporation
Post Retirement Health Care Plan**

**January 1, 2020 Actuarial Valuation
For Calendar Year 2020 Funding**

Final Results

June 12, 2020

ACTUARIAL VALUATION
ALASKA RAILROAD CORPORATION
POSTRETIREMENT HEALTH CARE PLAN

We are pleased to present the results of our January 1, 2020 actuarial valuation of the Alaska Railroad Corporation (ARRC) Postretirement Health Care Plan (Plan).

The purpose of this valuation is to:

- Determine the Plan's January 1, 2020 Funded Status, and
- Calculate the 2020 Actuarially Determined Contribution.

The information in this report may not be appropriate for purposes other than Plan funding but may be useful to ARRC for the Plan's financial management. Future valuations may differ significantly if the Plan's experience differs from our assumptions or if there are changes in plan design, actuarial methods or actuarial assumptions. The project scope did not include an analysis of this potential variation.

The valuation is based on the Plan's benefit provisions summarized in Section 8, participant data, and on the Plan's financial information, all furnished by ARRC. We reviewed the financial and participant data for reasonableness, including comparing to prior year data, but did not perform an audit.

Effective December 31, 2015, the Plan and ARRC, respectively, began accounting for the Plan and its obligations in accordance with GASB Statements 74 and 75. The required accounting information for 2020 will be provided separately.

To the best of our knowledge, this report is complete and accurate and has been conducted using generally accepted actuarial principles and practices. As members of the American Academy of Actuaries, meeting Academy Qualification Standards, we certify the actuarial results and opinions herein.

Respectfully submitted,



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SECTION 1

EXECUTIVE SUMMARY

Following are the valuation results. See discussion after the following two tables.

(\$ amounts in Millions)

	January 1, 2020	January 1, 2019	% change
■ Participant Counts			
Active and layoff employees potentially eligible for benefits			
• Actives	434	461	(6%)
• Layoffs	24	31	(23%)
• Retirees, Disabled & Survivors	32	37	(14%)
• Total	490	529	(7%)
■ Projected Payroll for Contribution Year			
	\$ 39.28	\$ 40.29	(3%)
■ Assets			
• Market Value of Assets	50.91	45.25	13%
• Approximate Annual Rate of Return	13.5%	(2.1%)	
• Actuarial Value of Assets	50.43	48.36	4%
• Approximate Annual Rate of Return	5.2%	3.7%	
■ Plan Funded Status			
• Actuarial Accrued Liability	\$ 14.12	\$ 14.74	(4%)
• Actuarial Value of Plan Assets	50.43	48.36	4%
• Unfunded Actuarial Accrued Liability	(36.3)	(33.63)	8%
• Funded Ratio, Actuarial Value Basis	357.0%	328.2%	
• Funded Ratio, Market Value Basis	360.5%	307.0%	
	2020	2019	% change
■ Actuarially Determined Contribution (ADC)			
• Total Normal Cost	\$ 0.56	\$ 0.57	(2%)
• Expected Expenses	0.07	0.08	(13%)
• Amortization of Unfunded Liability	(7.56)	(7.00)	8%
• Total	(6.93)	(6.35)	9%
• Final ARRC ADC	0.00	0.00	

SECTION 1

EXECUTIVE SUMMARY

The following table lists various measures of retirement plan risk, or contribution volatility

(\$ amounts in Millions)

	January 1, 2020	January 1, 2019
■ Risk Measures – Market Value of Assets		
• Actuarial Accrued Liability	\$ 14.12	\$ 14.74
• Market Value of Assets	50.91	45.25
• Unfunded AAL (on MVA)	(36.79)	(30.51)
• Funded Ratio (MVA/AAL)	360.5%	307.0%
• UAAL (on MVA)/Payroll	(93.7%)	(75.7%)
■ Payroll for year following valuation date	\$ 39.28	\$ 40.29
■ Risk Measures – Actuarial Value of Assets		
• Actuarial Accrued Liability	\$ 14.12	\$ 14.74
• Actuarial Value of Assets	50.43	48.36
• Unfunded AAL (on AVA)	(36.30)	(33.63)
• Funded Ratio (AVA/AAL)	357.0%	328.2%
• UAAL (on AVA)/Payroll	(92.4%)	(83.5%)
■ Volatility Ratios		
• Asset Volatility Index (MVA/Payroll)	1.3	1.1
• Liability/Full funding Volatility Index (AAL/Payroll)	0.4	0.4
• Maturity Ratio (Retiree Count/Total Count)	6.5%	7.0%
• Maturity Ratio (Retiree AAL/Total AAL)	19.4%	22.4%

SECTION 1

EXECUTIVE SUMMARY

Purpose of Actuarial Valuation

The actual costs of a defined benefit retiree healthcare plan are determined by the amount of the benefit promise: the actual benefits to be received by plan participants, and how long they and their beneficiaries live to receive payments. An actuarial valuation is a mathematical model which attempts to quantify this actual cost by setting assumptions that will predict reality as closely as possible. In addition, the actuarial funding methodology provides a reasonable plan, or method, towards funding the expected plan costs in a logical manner taking into account the often conflicting needs of stakeholders.

The information in this report on the actuarial valuation is to assist the ARRC in making informed decisions regarding Plan, benefits and investments.

Discussion of Results

Changes since the prior valuation and their effects on the Plan's unfunded actuarial accrued liability are detailed in Section 5 of the report.

During 2019, Plan investments earned 13.5% on a market value basis and 5.2% on the smoothed actuarial asset value basis used to determine the Plan's contribution amount. This actuarial loss on the smoothed actuarial value of assets (which were assumed to earn 6.75% in the prior valuation) increased the unfunded actuarial accrued liability by approximately \$0.8 million.

Projected medical claims increased more than expected increasing the unfunded actuarial accrued liability by approximately \$0.4 million. Other significant gains occurred due to participant demographics (\$1.7 million), mainly fewer participants electing coverage than expected by the actuarial assumptions used in the previous valuation.

The mortality assumption - the expected future retiree deaths - was updated and decreased the unfunded actuarial accrued liability by approximately \$0.35 million.

The excise tax was repealed and decreased the unfunded actuarial accrued liability by approximately \$0.24 million.

Actuarial Assumptions

The actuarial valuation was performed using the actuarial assumptions and methods selected by the ARRC or recommended by Bartel Associates.

- **Discount rate:** The discount rate remains at 6.75%. This discount rate was selected by the ARRC. Bartel Associates believes it is reasonable. We estimate that a passively managed portfolio with a similar asset allocation would exceed 6.75% investment return about 35%-40% of the time.
- **Mortality:** The mortality tables were updated based on the 2013-2017 Alaska PERS experience study for non-teachers, to reflect the tables as implemented by Alaska PERS. This assumption was selected to reflect current and recent observed mortality among a group similar to the ARRC population. Continuous future improvement in longevity is reflected by applying the Society of Actuaries' most current fully generational projection Scale MP-2019 beginning from the date of the State plan's experience study.

Overall, we believe the actuarial assumptions selected for this valuation are reasonable and appropriate. We will continue to monitor them in the future.

SECTION 1

EXECUTIVE SUMMARY

Accounting

Effective December 31, 2015, the Plan and ARRC respectively adopted GASB Statements 74 and 75. Plan and Employer accounting information is not included in this report.

SECTION 2

LIABILITY INFORMATION & FUNDED STATUS

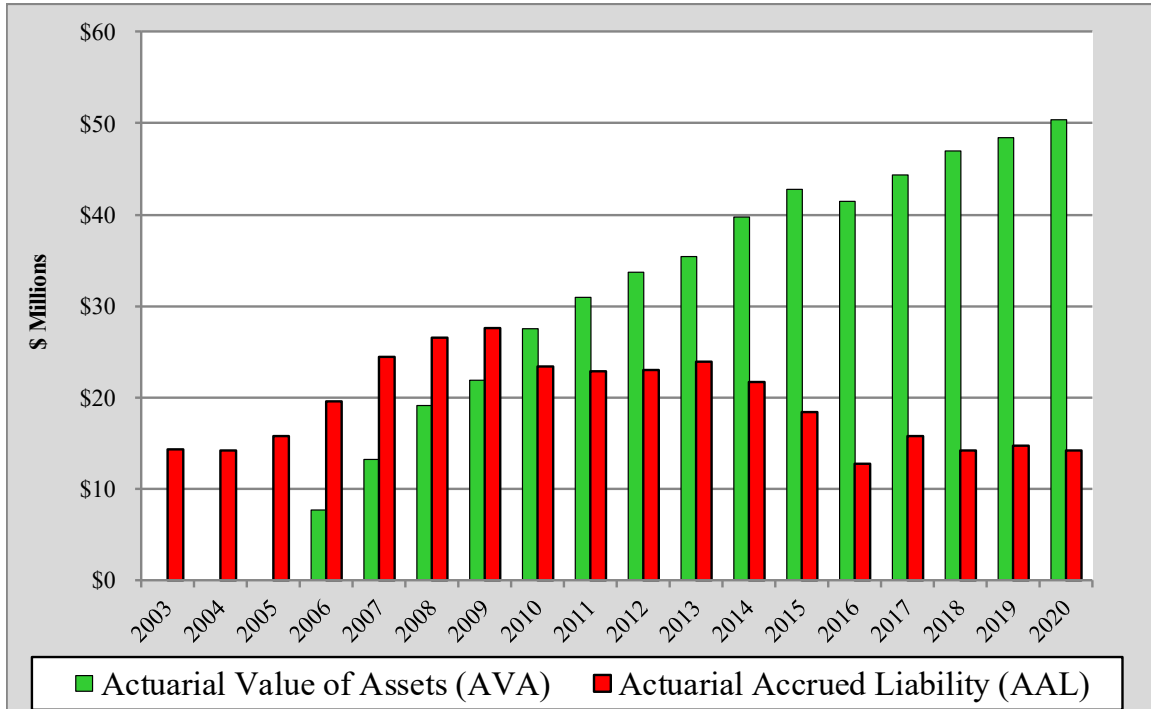
A comparison of the Present Value of Benefits, Actuarial Accrued Liability, Employer Normal Cost, and the Funded Ratio for the current and prior valuations follows. (Note that numbers throughout the report may not add due to rounding.)

	January 1, 2020	January 1, 2019
■ Present Value of Projected Benefits		
• Active and Layoff Employees	\$ 15,178,496	\$ 15,450,032
• Retirees and Beneficiaries	2,740,587	3,306,068
• Total	17,919,083	18,756,100
■ Actuarial Accrued Liability		
• Active and Layoff Employees	\$ 11,382,668	\$ 11,430,636
• Retirees and Beneficiaries	2,740,587	3,306,068
• Total	14,123,255	14,736,704
	2020	2019
■ Normal Cost (payable end of contribution year)		
• Total Normal Cost	\$ 557,067	\$ 574,028
• Expected Expenses	70,000	76,075
• Total Normal Cost Plus Expenses	627,067	650,103
	January 1, 2020	January 1, 2019
■ Plan Funded Status		
• Total Actuarial Accrued Liability	\$ 14,123,255	\$ 14,736,704
• Actuarial Value of Assets	50,425,458	48,363,835
• (Overfunded) Actuarial Accrued Liability	(36,302,203)	(33,627,131)
• Funded Ratio – Actuarial Value Basis	357.0%	328.2%

SECTION 2

LIABILITY INFORMATION & FUNDED STATUS

The chart below shows the history of the Plan's funded status from 2003 to the present. (\$ amounts in millions)



SECTION 3

ASSET INFORMATION

Assets for the Plan are held in trust. Trust monies may be used to pay benefits to Plan participants and their beneficiaries. The trust is managed under the direction of ARRC. Asset information is provided by ARRC and has been audited.

Asset Reconciliation – Market Value of Trust Assets

Following reconciles the January 1, 2018 through January 1, 2019 and the January 1, 2019 through January 1, 2020 market value of assets.

	2019	2018
■ Beginning of Year Balance:	\$ 45,248,167	\$ 46,627,143
■ Additions		
• Contributions	-	-
• Investment Earnings (Loss)	6,096,578	(957,627)
• Total Additions	<u>6,096,578</u>	<u>(957,627)</u>
■ Deductions		
• Benefit Payments Net of Retiree Premium	(370,933)	(349,724)
• Administrative and Investment Consulting Expenses	(59,015)	(71,625)
• Total Deductions	<u>(429,948)</u>	<u>(421,349)</u>
■ Net Assets at End of Year	50,914,797	45,248,167
■ Approximate Return on Assets	13.5%	(2.1%)

SECTION 3

ASSET INFORMATION

Asset Allocation

The target trust asset allocation and the real rates of return of broad asset classes are shown below. This information is provided by the Investment Advisor, Hyas Group.

	Target Allocation	Real Rate of Return - Intermediate Term	Real Rate of Return - Long Term
■ Cash	0.00%	n/a	n/a
■ US TIPS	5.00%	2.80%	1.94%
■ Total Bond Return	30.00%	2.70%	2.43%
■ Global Bond	5.00%	3.05%	2.43%
■ High Yield Bond	10.00%	4.72%	3.88%
■ Domestic Large Cap	15.00%	4.87%	6.80%
■ Domestic Mid Cap	5.00%	5.60%	7.77%
■ Domestic Small Cap	4.00%	5.85%	8.74%
■ US Healthcare (Equity)	5.00%	5.26%	7.28%
■ International Equity	6.00%	5.36%	7.04%
■ Real Estate	15.00%	5.11%	4.61%

SECTION 3

ASSET INFORMATION

Development of Actuarial Value of Assets

The Actuarial Value of Assets is based upon a five year smoothing of market assets. This method reduces volatility in contribution rates, and also reduces volatility in the size of the actuarial gains and losses due to asset returns.

	2019
■ Invested Market Value of Assets beginning of year	\$ 45,248,167
• Employer Contributions	-
• Benefit Payments and Expenses	(429,948)
• Expected Earnings	3,039,741
■ Expected Market Value of Assets (MVA) at year end	47,857,960
■ Market Value of Assets at year end	50,914,797
■ Difference between MVA & Expected MVA	3,056,837

Year Ending December 31	Asset Gain/(Loss)	Percentage Not Yet Recognized as of January 1, 2020	Amount Not Yet Recognized as of January 1, 2020
2015	(2,774,460)	-	\$ -
2016	(356,543)	20%	(71,309)
2017	1,424,053	40%	569,621
2018	(4,090,739)	60%	(2,454,443)
2019	3,056,837	80%	2,445,470

(1) Total Amount Not Yet Recognized as of January 1, 2020	489,339
(2) Net Market Value of Assets	50,914,797
(3) Preliminary Actuarial Value of Assets (2) – (1)	50,425,458
(4) Minimum: 80% Market value	40,731,838
(5) Maximum: 120% Market value	61,097,756
(6) Actuarial value of assets: (3) but not less than (4) and not greater than (5)	50,425,458
(7) Approximate return on actuarial value of assets	5.2%

SECTION 4

CONTRIBUTION DEVELOPMENT

Actuarially Determined Contribution

Following is the development of the 2020 Actuarially Determined Contribution based on ARRC's funding policy. The fiscal year 2019 Actuarially Determined Contribution, which was calculated in the January 1, 2019 actuarial valuation, is shown for comparison.

Contribution Year	2020	2019
<ul style="list-style-type: none"> ■ Actuarially Determined Contribution (ADC) payable at the end of the year <ul style="list-style-type: none"> • Normal Cost • Expected Administrative Expenses • Net Normal Cost • Amortization of Unfunded Liability, 6-year amortization, end of year • Total ADC (End of year) 	\$ 557,067 <u>70,000</u> 627,067 <u>(7,557,369)</u> (6,930,302)	\$ 574,028 <u>76,075</u> 650,103 <u>(7,000,474)</u> (6,350,371)
<ul style="list-style-type: none"> ■ Projected Payroll for Contribution Year 	39,283,774	40,294,825
<ul style="list-style-type: none"> ■ Actuarially Determined Contribution (ADC) (as a percent of Projected Payroll) <ul style="list-style-type: none"> • Total Normal Cost • Expected Expenses • Subtotal • Amortization of Unfunded Liability • Total ADC 	1.4% <u>0.2%</u> 1.6% <u>(19.2%)</u> (17.6%)	1.4% <u>0.2%</u> 1.6% <u>(17.4%)</u> (15.8%)

SECTION 5

ACTUARIAL (GAIN)/LOSS ANALYSIS

The gain/loss analysis of Plan assets, actuarial liability, and unfunded actuarial liability for the one year period between valuation dates is shown below:

	Actuarial Accrued Liability (Gain)/Loss	Actuarial Asset Value Gain/(Loss)	Unfunded Accrued Liability (Gain)/Loss
■ January 1, 2019 Actual Value	\$14,736,704	\$48,363,835	(33,627,131)
■ January 1, 2020 Expected Value	16,019,509	51,266,369	(35,246,860)
• Demographic (gain)/loss	(1,734,971)	-	(1,734,971)
• Projected claims increased more than expected	432,269	-	432,269
• Assumption Changes			
○ Repeal of ACA Excise tax	(239,940)	-	(239,940)
○ Mortality change	(353,612)	-	(353,612)
• Benefit payments greater than expected	-	(94,171)	94,171
• Expenses less than expected	-	17,060	(17,060)
• Investment loss on smoothed asset value	-	(763,800)	763,800
	<hr/>	<hr/>	<hr/>
■ January 1, 2020 Actual Value	14,123,255	50,425,458	(36,302,203)
■ The demographic (gain)/loss is summarized as follows:			
Note that “expected” refers to the 1/1/2019 valuation’s actuarial assumptions.			
• Fewer/later retirements than expected		(48,821)	
• More active terminations than expected		(2,179)	
• Fewer new disablements than expected		(139,495)	
• Previous retirees dropping coverage		(484,377)	
• Fewer eligible retirements electing coverage than expected		(840,989)	
• Other, including new entrants and changes in data		(219,110)	
		<hr/>	
■ Total demographic (gain)/loss		(1,734,971)	

SECTION 6

SCHEDULE OF FUNDING PROGRESS

Schedule of Funding Progress.

(amounts in \$000s)

Actuarial Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL) (3) - (2)	Funded Ratio (2) / (3)	Covered Payroll	UAAL as a Percentage of Covered Payroll (4) / (6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1/1/2003	\$ 0	\$14,299	\$14,299	0.0%	\$27,688	51.6%
1/1/2004	0	14,093	14,093	0.0%	29,422	47.9%
1/1/2005	0	15,766	15,766	0.0%	32,863	48.0%
1/1/2006	7,614	19,517	11,903	39.0%	37,120	32.1%
1/1/2007	13,235	24,477	11,241	54.1%	41,255	27.2%
1/1/2008	19,031	26,517	7,486	71.8%	44,541	16.8%
1/1/2009	21,897	27,590	5,692	79.4%	46,950	12.1%
1/1/2010	27,530	23,333	(4,197)	118.0%	42,466	(9.9%)
1/1/2011	30,915	22,857	(8,059)	135.3%	41,264	(19.5%)
1/1/2012	33,661	22,987	(10,674)	146.4%	45,375	(23.5%)
1/1/2013	35,455	23,833	(11,622)	148.8%	45,872	(25.3%)
1/1/2014	39,712	21,595	(18,117)	183.9%	43,443	(41.7%)
1/1/2015	42,809	18,086	(24,724)	236.7%	45,225	(54.7%)
1/1/2016	41,418	12,707	(28,711)	326.0%	46,786	(61.3%)
1/1/2017	44,335	15,688	(28,647)	282.6%	41,428	(69.1%)
1/1/2018	47,031	14,103	(32,928)	333.5%	39,791	(82.8%)
1/1/2019	48,364	14,737	(33,627)	328.2%	40,295	(83.5%)
1/1/2020	50,425	14,123	(36,302)	357.0%	39,284	(92.4%)

SECTION 7

DISCOUNT RATE SENSITIVITY

Discount Rate Sensitivity

Following is a sensitivity of the discount rate assumption. The present value of projected benefits, funded status and 2020 ADC are shown under the current valuation assumptions, which use 6.75% discount rate. Results are also shown with 6.50% and 6.25% discount rate.

Discount Rate:	Current Assumption 6.75%	Sensitivity 6.50%	Sensitivity 6.25%
■ Present Value of Projected Benefits	\$ 17,919,083	\$ 18,737,215	\$ 19,613,271
■ Plan Funded Status			
• Total Actuarial Accrued Liability	14,123,255	14,645,468	15,197,324
• Actuarial Value of Assets	<u>50,425,458</u>	<u>50,425,458</u>	<u>50,425,458</u>
• Unfunded Actuarial Accrued Liability	(36,302,203)	(35,779,990)	(35,228,134)
• Funded Ratio	357.0%	344.3%	331.8%
■ Actuarially Determined Contribution at End of Year			
• Employer Normal Cost	557,067	587,461	620,036
• Expected Expenses	70,000	70,000	70,000
• Amortization of Unfunded Liability	<u>(7,557,369)</u>	<u>(7,391,012)</u>	<u>(7,220,455)</u>
• Total Employer Actuarially Determined Contribution	(6,930,302)	(6,733,551)	(6,530,419)
■ Projected Payroll for Contribution Year	39,283,774	39,283,774	39,283,774
■ Actuarially Determined Contribution (ADC) (as a percent of Plan payroll)			
• Employer Normal Cost	1.4%	1.5%	1.6%
• Expected Expenses	0.2%	0.2%	0.2%
• Amortization of Unfunded Liability	<u>(19.2%)</u>	<u>(18.8%)</u>	<u>(18.4%)</u>
• Total Employer Actuarially Determined Contribution	(17.6%)	(17.1%)	(16.6%)

SECTION 8

PLAN PROVISION SUMMARY

A. Eligibility

- Retirement Eligibility
 - Early Retirement is available at age 55 with 5 years of eligible vesting service. Retirees may continue health care coverage by paying the full retiree premium until meeting the age requirement for partial employer premium payment.
 - Employees must be hired before the following dates and in Tier 1 of the Alaska Railroad Corporation Pension Plan to be eligible for retiree medical coverage:

<u>Group¹</u>	<u>Hire Date</u>	<u>Eligible Plan</u>
Non-Union	November 4, 2014	Blue/Gold Essentials
IBT	April 26, 2016	Blue/Gold Essentials
ARW	November 4, 2014	Blue/Gold
TCU	April 1, 2015	Blue/Gold
UTU	March 4, 2016	Blue/Gold
ATDA	N/A	Old

- Disabled employees are eligible after 5 years of vesting service if they receive Corporate Pension disability benefits.
- Employees must be enrolled in the ARRC Health Plan at time of employee's retirement or disablement to continue coverage under the ARRC Retiree Medical Plan. Eligible dependents must also be enrolled in the ARRC Health Plan at time of employee's retirement for coverage under the ARRC Retiree Medical Plan.
- Surviving spouses eligible for an annuity and children eligible for a CSRS annuity are eligible for continuing coverage if enrolled at time of employee's death.

B. Benefits

- Retired employees receive the same health care benefits provided to active employees except dental, vision or hearing coverage.
- Blue Plan (PPO) and Gold Plan were offered to ARW employees beginning in 2015, TCU employees beginning in 2016, and UTU employees beginning in 2018.
- Blue Essentials Plan and Gold Essentials Plan were offered to Non-Union and IBT employees beginning in 2018.

¹ ARW -The Alaska Railroad Workers/American Federation of Government Employees, AFL/CIO, Local 183
 TCU - Carmen's Division of Transportation, Communication International Union, Lodge No. 6067, AFL/CIO, CLC, IAM
 UTU - United Transportation Union, Local 1626, AFL/CIO
 IBT - Teamsters Union Local 959 of the International Brotherhood of Teamsters
 ATDA – American Train Dispatchers Association

SECTION 8

PLAN PROVISION SUMMARY

C. Retiree Contribution

- The retiree contribution depends on the type of retirement, age, and union group.
 - ARW, TCU and ATDA retirees after age 62 with 5 years of service; IBT, UTU and non-union early retirees after age 58: Retiree pays 60% of retiree (plus dependent, if applicable) premium.
 - Early Retirement (age 55 with 5 years of service): Retiree pays 100% of retiree (plus dependent, if applicable) premium until reaching age 58 (for IBT, UTU and non-union employees) or 62 (for ARW, TCU and ATDA employees), and 60% of the premium after that age.
 - Disabled Retirees: Retiree pays 60% of retiree (plus dependent, if applicable) premium, regardless of age or union status.

SECTION 8 PLAN PROVISION SUMMARY

D. Medical Premiums

Total Retiree Monthly Premiums for 2020:

Medical Plan	Old Plan	Blue Plan	Gold Plan	Blue Essentials Plan	Gold Essentials Plan
Retiree <65	\$1,147.80	\$951.96	\$873.21	\$904.37	\$829.55
Retiree <65; Spouse <65	2,575.01	2,127.44	1,944.20	\$2,021.07	\$1,846.99
Retiree <65; Spouse 65+	2,146.79	1,774.75	1,622.86	\$1,686.01	\$1,541.72
Retiree 65+	\$929.74	\$772.35	\$709.57	\$733.73	\$674.10
Retiree 65+; Spouse 65+	1,834.32	1,517.40	1,388.40	\$1,441.53	\$1,318.98
Retiree 65+; Spouse <65	2,105.70	1,740.90	1,592.03	\$1,653.85	\$1,512.43

Total Retiree Monthly Premiums for 2019:

Medical Plan	Old Plan	Blue Plan	Gold Plan	Blue Essentials Plan	Gold Essentials Plan
Retiree <65	\$1,147.80	\$951.96	\$873.21	\$951.96	\$873.21
Retiree <65; Spouse <65	2,575.01	2,127.44	1,944.20	2,127.44	1,944.20
Retiree <65; Spouse 65+	2,146.79	1,774.75	1,622.86	1,774.75	1,622.86
Retiree 65+	\$929.74	\$772.35	\$709.57	\$772.35	\$709.57
Retiree 65+; Spouse 65+	1,834.32	1,517.40	1,388.40	1,517.40	1,388.40
Retiree 65+; Spouse <65	2,105.70	1,740.90	1,592.03	1,740.90	1,592.03

E. Other OPEB

- No ARRC contribution for retiree life insurance or dental, vision, or hearing coverage.

SECTION 9

METHODS AND ASSUMPTIONS

Actuarial Cost Methods

The actuarial cost method used for this valuation is the Entry Age Normal method.

The Present Value of Projected Benefits (PVPB) is the present value of all future benefits for current plan participants. It is computed by projecting the total future benefit payments from the plan, using actuarial assumptions (i.e. probability of death or retirement, future medical costs, etc.), and discounting the payments to the valuation date using the valuation interest rate to determine the present value.

The Normal Cost is calculated by allocating each employee's PVPB as a level percent of pay from entry through the last expected retirement age. The Actuarial Accrued Liability (AAL) represents the portion of the PVPB attributable to past service and is calculated as the PVPB less the present value of all future Normal Costs.

Funding Policy

The Unfunded Actuarial Accrued Liability is being amortized over a 6 year open period as a level dollar amount. The Actuarially Determined Contribution (ADC) cannot be less than \$0.

Asset Valuation Method

The actuarial value of assets is a 5-year smoothed market value. Gains and losses relative to the expected market value of assets are recognized over a five year period. The actuarial value of assets may not be less than 80% nor more than 120% of market value.

During 2016, non-OPEB assets were separated for accounting and the OPEB assets are reported separately, so those adjustments are no longer required.

SECTION 9

METHODS AND ASSUMPTIONS

Claims Development Methodology

An independent estimate of projected health care expenses for the three plans was developed based on claims data provided by ARRC. Because of the relatively small size of the retiree population and because the same plans are offered to both actives and retirees, the claims experience was used for both the active and retiree populations.

The base experience was claims paid from January 1, 2019 through December 31, 2019. An estimated 2020 premium equivalent was developed from the average claims per employee, per month (PEPM) for each calendar year. A gross premium equivalent was projected by applying trend and an estimated claims/premium ratio.

To convert from PEPM to per member, per month (PMPM), total membership was based on membership data and the distribution of employees/retirees across the benefit tiers (Single, Dual, Family) as reported in the actuarial valuation data.

Expected claims were graded by age based on ARRC's current enrollment distribution and plan-specific age/gender factors, which were developed using the AHP Cost Model, and were calculated to reflect differences in utilization of specific services for different demographic groups as well as age/gender-based differences in expected underlying costs. These factors were normalized based on plan enrollment, then applied to the average projected health plan expense to develop rates by age/gender cell.

It is not uncommon for premium equivalents for retiree plans to include implicit subsidies. The methodology above results in age-graded rates that reflect the actual expected cost at each age/gender band, without any subsidization among groups.

Data Quality

The Corporation provided participant data, including claims experience for 2019, as of January 1, 2020. We reviewed the data, but did not perform an audit. We had no unresolved concerns and in our opinion, the data was of sufficient quality for use in this actuarial valuation without limitation.

Basis for Assumptions

The base mortality assumptions are based on the 2013-2017 Alaska PERS experience study for non-teachers, since the covered populations are similar. Mortality improvement is based on the Society of Actuaries most current table. All other demographic assumptions are as adopted by ARRC and are the same as determined by an experience study performed by Bartel Associates based on actual experience for the period 2010 through 2014, except for some assumptions which have been updated as noted on the following pages. Inflation is based on our estimate over the plan's very long term time horizon. The discount rate was selected by ARRC. Bartel Associates estimates that a passively managed portfolio with a similar asset allocation would exceed the selected rate about 35%-40% of the time. We have reviewed these assumptions and believe they are reasonable.

SECTION 9

METHODS AND ASSUMPTIONS

Actuarial Assumptions

Assumptions used in the actuarial valuation are as adopted by the Postretirement Health Care Committee or recommended by Bartel Associates. We have reviewed these assumptions and believe they are reasonable in the aggregate.

January 1, 2019 Valuation	January 1, 2020 Valuation																
<p>■ Discount Rate</p> <ul style="list-style-type: none"> 6.75%, net of investment but not administrative expenses 	<p>■ Discount Rate</p> <ul style="list-style-type: none"> Same 																
<p>■ Salary Increases</p> <ul style="list-style-type: none"> 2.8% salary inflation, plus Merit increase rate based on ARRC 2010-2014 Experience Study. Sample Rates: <table style="margin-left: 40px;"> <thead> <tr> <th style="text-align: center;"><u>Service</u></th> <th style="text-align: center;"><u>Salary Rates</u></th> </tr> </thead> <tbody> <tr><td style="text-align: center;">0</td><td style="text-align: center;">8.0%</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">2.5%</td></tr> <tr><td style="text-align: center;">10</td><td style="text-align: center;">1.5%</td></tr> <tr><td style="text-align: center;">15</td><td style="text-align: center;">1.3%</td></tr> <tr><td style="text-align: center;">20</td><td style="text-align: center;">1.1%</td></tr> <tr><td style="text-align: center;">25</td><td style="text-align: center;">1.1%</td></tr> <tr><td style="text-align: center;">30+</td><td style="text-align: center;">1.1%</td></tr> </tbody> </table>	<u>Service</u>	<u>Salary Rates</u>	0	8.0%	5	2.5%	10	1.5%	15	1.3%	20	1.1%	25	1.1%	30+	1.1%	<p>■ Salary Increases</p> <ul style="list-style-type: none"> Same
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60	2.710%	1.769%																																																																	
65	3.231%	2.079%																																																																	
70	3.965%	2.702%																																																																	
<u>Age</u>	<u>Male</u>	<u>Female</u>																																																																	
25	1.009%	0.294%																																																																	
30	1.059%	0.374%																																																																	
35	1.269%	0.519%																																																																	
40	1.413%	0.682%																																																																	
45	1.884%	0.958%																																																																	
50	2.081%	1.177%																																																																	
55	2.383%	1.552%																																																																	
60	2.835%	1.936%																																																																	
65	3.418%	2.235%																																																																	
70	4.174%	2.855%																																																																	
<p>■ Coverage</p> <ul style="list-style-type: none"> ● 45% of future retirees are assumed to elect coverage at retirement (35% if fully retiree-paid).² ● 85% of future disabled retirees are assumed to elect coverage. ● 25% of disabled retirees under age 65 are assumed to be Medicare eligible. ● All retirees over age 65 are assumed Medicare eligible. ● 55% of non-disabled retirees are assumed to continue coverage at first Medicare eligibility.² ● Laid off employees accumulate 75% of full-time service in the future.² ● For active employees, 60% of those electing retiree coverage are assumed to be married at retirement and elect 2-party coverage with their spouse (75% married and 80% of these elect coverage). No family coverage is assumed.³ ● Female spouses are assumed to be 4 years younger than their husbands.³ 	<p>■ Coverage</p> <ul style="list-style-type: none"> ● Same 																																																																		

² Assumption selected based on 2010-2014 Experience study.

³ Assumption remains reasonable based on current data.

SECTION 9

METHODS AND ASSUMPTIONS

January 1, 2019 Valuation	January 1, 2020 Valuation																																																																																																																					
<p>■ Medical Plan at Retirement</p> <ul style="list-style-type: none"> • Employees eligible for retiree medical coverage through the Civil Service Retirement System (CSRS) are assumed to elect CSRS coverage and not coverage from the ARRC plan.⁴ • Current retirees and active employees not eligible for the Blue and Gold plans are assumed to retain their grandfathered coverage. • Actives are assumed to stay in their elected plans; if no election is reported, depending on their group, assumed to elect 80% Blue plan and 20% Gold plan (or 80% Blue Essentials plan and 20% Gold Essentials plan), based on the current active employee election proportion. 	<p>■ Medical Plan at Retirement</p> <ul style="list-style-type: none"> • Same 																																																																																																																					
<p>■ Health Care Trend⁵</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Year</u></th> <th colspan="2" style="text-align: center;"><u>Increase from Prior Year</u></th> </tr> <tr> <th></th> <th style="text-align: center;"><u>Non-Medicare</u></th> <th style="text-align: center;"><u>Medicare</u></th> </tr> </thead> <tbody> <tr> <td>2019</td> <td colspan="2" style="text-align: center;">Actual Premiums</td> </tr> <tr> <td>2020</td> <td style="text-align: center;">7.50%</td> <td style="text-align: center;">6.50%</td> </tr> <tr> <td>2021</td> <td style="text-align: center;">7.25%</td> <td style="text-align: center;">6.30%</td> </tr> <tr> <td>2022</td> <td style="text-align: center;">7.00%</td> <td style="text-align: center;">6.10%</td> </tr> <tr> <td>2023</td> <td style="text-align: center;">6.75%</td> <td style="text-align: center;">5.90%</td> </tr> <tr> <td>2024</td> <td style="text-align: center;">6.50%</td> <td style="text-align: center;">5.70%</td> </tr> <tr> <td>2025</td> <td style="text-align: center;">6.25%</td> <td style="text-align: center;">5.50%</td> </tr> <tr> <td>2026</td> <td style="text-align: center;">6.00%</td> <td style="text-align: center;">5.30%</td> </tr> <tr> <td>2027</td> <td style="text-align: center;">5.80%</td> <td style="text-align: center;">5.15%</td> </tr> <tr> <td>2028</td> <td style="text-align: center;">5.60%</td> <td style="text-align: center;">5.00%</td> </tr> <tr> <td>2029</td> <td style="text-align: center;">5.40%</td> <td style="text-align: center;">4.85%</td> </tr> <tr> <td>2030</td> <td style="text-align: center;">5.20%</td> <td style="text-align: center;">4.70%</td> </tr> <tr> <td>2031-2035</td> <td style="text-align: center;">5.05%</td> <td style="text-align: center;">4.60%</td> </tr> <tr> <td>2036-2045</td> <td style="text-align: center;">4.90%</td> <td style="text-align: center;">4.50%</td> </tr> <tr> <td>2046-2055</td> <td style="text-align: center;">4.75%</td> <td style="text-align: center;">4.45%</td> </tr> <tr> <td>2056-2065</td> <td style="text-align: center;">4.60%</td> <td style="text-align: center;">4.40%</td> </tr> <tr> <td>2066-2075</td> <td style="text-align: center;">4.30%</td> <td style="text-align: center;">4.20%</td> </tr> <tr> <td>2076+</td> <td style="text-align: center;">4.00%</td> <td style="text-align: center;">4.00%</td> </tr> </tbody> </table>	<u>Year</u>	<u>Increase from Prior Year</u>			<u>Non-Medicare</u>	<u>Medicare</u>	2019	Actual Premiums		2020	7.50%	6.50%	2021	7.25%	6.30%	2022	7.00%	6.10%	2023	6.75%	5.90%	2024	6.50%	5.70%	2025	6.25%	5.50%	2026	6.00%	5.30%	2027	5.80%	5.15%	2028	5.60%	5.00%	2029	5.40%	4.85%	2030	5.20%	4.70%	2031-2035	5.05%	4.60%	2036-2045	4.90%	4.50%	2046-2055	4.75%	4.45%	2056-2065	4.60%	4.40%	2066-2075	4.30%	4.20%	2076+	4.00%	4.00%	<p>■ Health Care Trend⁶</p> <table style="width: 100%; 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⁴ Valuation excludes 3 CSRS employees assumed not to elect ARRC plan.

⁵ Trend develop using the Society of Actuaries' Getzen Model.

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SECTION 9

METHODS AND ASSUMPTIONS

January 1, 2019 Valuation	January 1, 2020 Valuation
<ul style="list-style-type: none"> ■ Health Care Reform Excise Tax <ul style="list-style-type: none"> • 0.1% added to the healthcare trend rates above beginning in year 2022 to estimate the excise tax in each year. • The estimate reflects our best guess as to the effect of the Excise tax under current law, including the effective date deferral to 2022. 	<ul style="list-style-type: none"> ■ Health Care Reform Excise Tax <ul style="list-style-type: none"> • Repealed 12/20/19
<ul style="list-style-type: none"> ■ Other <ul style="list-style-type: none"> • All decrements are assumed to occur in the middle of the year. 	<ul style="list-style-type: none"> ■ Other <ul style="list-style-type: none"> • Same

SECTION 9 METHODS AND ASSUMPTIONS

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SECTION 9

METHODS AND ASSUMPTIONS

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65	4,795.71	3,862.78																																																																																																																							
70	5,524.96	4,355.70																																																																																																																							
75	6,566.59	5,104.42																																																																																																																							
80	7,893.20	6,093.67																																																																																																																							
85	9,277.27	7,161.28																																																																																																																							
<u>Age</u>	<u>Male</u>	<u>Female</u>																																																																																																																							
50	\$9,497.03	\$11,232.97																																																																																																																							
55	12,626.98	13,102.55																																																																																																																							
60	17,255.24	15,944.96																																																																																																																							
64	19,475.95	17,225.35																																																																																																																							
65	5,743.80	4,731.12																																																																																																																							
70	6,617.23	5,334.86																																																																																																																							
75	7,864.79	6,251.89																																																																																																																							
80	9,453.63	7,463.48																																																																																																																							
85	11,111.36	8,771.06																																																																																																																							
<u>Age</u>	<u>Male</u>	<u>Female</u>																																																																																																																							
50	\$9,029.17	\$10,723.83																																																																																																																							
55	12,080.70	12,547.16																																																																																																																							
60	16,614.67	15,330.60																																																																																																																							
64	18,797.23	16,588.63																																																																																																																							
65	5,065.80	4,110.24																																																																																																																							
70	5,836.08	4,634.70																																																																																																																							
75	6,936.38	5,431.35																																																																																																																							
80	8,337.73	6,483.96																																																																																																																							
85	9,799.75	7,620.01																																																																																																																							

SECTION 10 PARTICIPANT DATA

Data Summary

Following summarizes participant demographic information for the January 1, 2019 and January 1, 2020 actuarial valuations.

	January 1, 2020	January 1, 2019
■ Participant Counts		
• Actives	434	461
• Layoffs	24	31
• Service Retirees	29	34
• Disabled Participants	0	0
• Survivors	3	3
• Total	490	529
■ Actives		
• Average Age	48.2	47.7
• Average Vesting Service	14.7	14.3
• Salary		
> Total	\$ 36,707,000	\$ 37,424,000
> Average	84,579	81,179
■ Layoffs		
• Average Age	42.0	41.6
• Average Vesting Service	4.7	8.1
• Salary		
> Total	\$ 858,000	\$ 1,072,000
> Average	35,738	34,587
■ Retirees, Disableds & Beneficiaries		
• Average Age	69.1	68.9
• Average Service Retirement Age	60.3	60.5
• Average Disabled Retirement Age	N/A	N/A

SECTION 10 PARTICIPANT DATA

Data Reconciliation January 1, 2019 to January 1, 2020

	Actives	Layoffs	Receiving Payments			Total
			Disabled	Survivors	Retirees	
■ January 1, 2019	461	31	0	3	34	529
• New Entrants	-	-	-	-	-	-
• Rehired	15	(10)	-	-	-	5
• Disabled	-	-	-	-	-	-
• Terminated Non-Participating	(37)	(3)	-	-	-	(40)
• Layoff	(5)	5	-	-	-	-
• Deceased or Drop Coverage	-	-	-	(1)	(4)	(5)
• New Beneficiaries	-	-	-	1	(1)	-
• Retired with healthcare coverage	-	-	-	-	-	-
• Data Correction	-	<u>1</u> ⁷	-	-	-	<u>1</u>
■ January 1, 2020	434	24	0	3	29	490

Of the retirement-eligible (based on age and service) active employees or layoffs who terminated employment in 2019:

Number electing retiree medical coverage	0
Number not electing coverage	20
Total	20

⁷ Employee was rehired and laid off.

SECTION 10 PARTICIPANT DATA

Active Employee Medical Coverage January 1, 2020

Medical Plan	Employee	Employee+1	Family	Waived	Total
Old Plan	-	-	-	-	-
Blue Plan	47	51	66	-	164
Gold Plan	25	11	11	-	47
Blue Essentials Plan	23	32	52	-	107
Gold Essentials Plan	17	3	21	-	41
Waived	-	-	-	75	75
Total	112	97	150	75	434

Retired Participant Medical Coverage January 1, 2020 Retirees Under Age 65

Medical Plan	Employee	Employee+1	Family	Waived	Total
Old Plan	3	3	-	-	6
Blue Plan	-	2	-	-	2
Blue Essentials Plan	2	1	-	-	3
Gold Essentials Plan	-	-	-	-	-
Total	5	6	-	-	11

Retired Participant Medical Coverage January 1, 2020 Retirees Over Age 65

Medical Plan	Employee	Employee+1	Family	Waived	Total
Old Plan	12	4	-	-	16
Blue Plan	1	1	-	-	2
Blue Essentials Plan	2	-	-	-	2
Gold Essentials Plan	-	1	-	-	1
Total	15	6	-	-	21

**SECTION 10
PARTICIPANT DATA**

Retiree Medical Coverage by Age Group

January 1, 2020

Retirees in Corporation Medical Plans

Age	Retiree	Retiree+1	Family	Total
Under 50	-	-	-	-
50-54	-	-	-	-
55-59	2	1	-	3
60-64	3	5	-	8
65-69	4	3	-	7
70-74	6	3	-	9
75 and Over	5	-	-	5
Total	20	12	-	32

January 1, 2019

Retirees in Corporation Medical Plans

Age	Retiree	Retiree+1	Family	Total
Under 50	-	-	-	-
50-54	-	-	-	-
55-59	3	2	1	6
60-64	2	3	-	5
65-69	7	8	-	15
70-74	4	-	-	4
75 and Over	6	1	-	7
Total	22	14	1	37

SECTION 10 PARTICIPANT DATA

Active and Layoff Age/Service

Following are active and layoff counts by age and service groups:

January 1, 2020

Age	Vesting Service							Total
	Less Than 1	1-4	5-9	10-14	15-19	20-24	25 & Over	
Under 25	-	-	-	-	-	-	-	-
25-29	-	9	11	-	-	-	-	20
30-34	-	8	18	4	-	-	-	30
35-39	-	10	24	24	2	-	-	60
40-44	-	4	17	12	22	10	-	65
45-49	1	2	20	21	20	11	3	78
50-54	-	-	12	19	22	14	19	86
55-59	-	-	11	17	19	9	14	70
60-64	-	-	11	7	6	3	8	35
65 & Over	-	1	4	3	3	3	-	14
Total	1	34	128	107	94	50	44	458

January 1, 2019

Age	Vesting Service							Total
	Less Than 1	1-4	5-9	10-14	15-19	20-24	25 & Over	
Under 25	-	-	1	-	-	-	-	1
25-29	-	6	19	-	-	-	-	25
30-34	-	11	15	14	-	-	-	40
35-39	-	14	16	29	7	1	-	67
40-44	-	3	15	20	23	4	-	65
45-49	-	4	19	22	23	11	4	83
50-54	-	2	7	21	25	15	13	83
55-59	-	5	8	26	15	8	18	80
60-64	-	1	8	8	7	2	8	34
65 & Over	-	1	5	2	2	4	-	14
Total	-	47	113	142	102	45	43	492