

The City of Bismarck Employees' Pension Plan
 Individual Cost-Sharing Employers Portion of Plan-Wide Pension Amounts

Total	12/31/2021	12/31/2022	12/31/2021	12/31/2022
Cost Allocations	PV Payroll	PV Payroll	Percentage	Percentage
Administration	\$ 4,034,278	\$ 4,594,090	1.59%	1.78%
Maintenance	3,163,816	3,469,529	1.24%	1.34%
Attorney	3,626,618	4,799,869	1.43%	1.86%
Civic Center	9,182,308	9,475,018	3.61%	3.67%
Combined Communications	12,112,018	11,615,360	4.76%	4.50%
Engineering	19,460,472	19,989,086	7.65%	7.74%
Finance	21,826,986	22,857,784	8.58%	8.85%
Fire and Inspections	1,654,779	1,623,013	0.65%	0.63%
Forestry	-	-	0.00%	0.00%
Human Resources	2,885,546	2,505,570	1.13%	0.97%
Municipal Court	2,324,138	2,016,886	0.91%	0.78%
Planning	13,645,752	13,988,430	5.36%	5.42%
Police	8,349,267	8,796,152	3.28%	3.41%
Public Health	14,380,287	16,086,983	5.65%	6.23%
Government Aide	4,835,046	3,298,821	1.90%	1.28%
Bismarck Public Library	9,551,446	9,909,074	3.75%	3.84%
Roads and Streets	24,343,663	24,381,077	9.57%	9.44%
Airport and Flightline	10,795,533	9,988,355	4.24%	3.87%
Public Works Operations	14,693,192	16,369,236	5.77%	6.34%
Public Works Utility Operations	29,943,062	30,477,410	11.77%	11.80%
Fleet Services	5,275,332	4,535,349	2.07%	1.76%
Parks and Recreation	38,348,696	37,466,825	15.07%	14.51%
	\$ 254,432,235	\$ 258,243,917	100.00%	100.00%
Less Parks and Rec	(38,348,696)	(37,466,825)		
TOTAL CITY OF BISMARCK	216,083,539	220,777,092		
Allocation by Function				
General Government	\$ 51,507,134	\$ 54,232,158	20.24%	21.00%
Public Safety	22,116,064	22,034,525	8.69%	8.54%
Highway	49,079,467	48,905,512	19.29%	18.94%
Culture	9,551,446	9,909,074	3.75%	3.84%
Health	19,215,333	19,385,804	7.55%	7.51%
Total Governmental	\$ 151,469,444	\$ 154,467,073	59.52%	59.83%

The City of Bismarck Employees' Pension
Individual Cost-Sharing Employers Port

	Net Pension Liability	Net Pension Liability (Discount Rate 1% Lower)	Net Pension Liability (Discount Rate 1% Higher)	Pension Expense	Expense adjustment for changes in proportionate share	Pension Expense After Recognition for changes in proportionate share
Total	\$ 24,545,043	\$ 42,332,554	\$ 9,741,274	\$ 5,741,306	\$ 10	\$ 5,741,316
Cost Allocations						
Administration	\$ 436,650	\$ 753,085	\$ 173,295	\$ 102,136	\$ 2,602	\$ 104,738
Maintenance	329,765	568,741	130,875	77,135	658	77,793
Attorney	456,208	786,817	181,057	106,711	3,264	109,975
Civic Center	900,562	1,553,189	357,409	210,650	(4,609)	206,041
Combined Communications	1,103,993	1,904,044	438,145	258,234	(15,657)	242,577
Engineering	1,899,882	3,276,705	754,013	444,399	16,869	461,268
Finance	2,172,540	3,746,955	862,223	508,177	7,991	516,168
Fire and Inspections	154,261	266,052	61,222	36,083	(14,095)	21,988
Forestry	-	-	-	-	-	-
Human Resources	238,144	410,725	94,513	55,704	(1,856)	53,848
Municipal Court	191,697	330,617	76,079	44,840	(2,004)	42,836
Planning	1,329,544	2,293,049	527,661	310,992	(8,134)	302,858
Police	836,039	1,441,906	331,802	195,557	3,810	199,367
Public Health	1,529,003	2,637,054	606,821	357,648	24,326	381,974
Government Aide	313,540	540,758	124,436	73,340	119	73,459
Bismarck Public Library	941,818	1,624,342	373,782	220,300	5,470	225,770
Roads and Streets	2,317,323	3,996,660	919,684	542,043	(3,507)	538,536
Airport and Flightline	949,353	1,637,338	376,773	222,062	(6,980)	215,082
Public Works Operations	1,555,830	2,683,322	617,467	363,923	6,815	370,738
Public Works Utility Operations	2,896,755	4,996,000	1,149,645	677,577	(16,866)	660,711
Fleet Services	431,067	743,456	171,079	100,830	(2,542)	98,288
Parks and Recreation	3,561,071	6,141,737	1,413,293	832,966	4,336	837,302
	\$ 24,545,045	\$ 42,332,552	\$ 9,741,274	\$ 5,741,307	\$ 10	\$ 5,741,317
Less Parks and Rec	(3,561,071)	(6,141,737)	(1,413,293)	(832,966)	(4,336)	(837,302)
TOTAL CITY OF BISMARCK	20,983,974	36,190,815	8,327,981	4,908,341	(4,326)	4,904,015
Allocation by Function						
General Government	\$ 5,154,548	\$ 8,889,989	\$ 2,045,703	\$ 1,205,695	\$ 2,521	\$ 1,208,216
Public Safety	2,094,293	3,612,002	831,169	489,874	(25,942)	463,932
Highway	4,648,272	8,016,821	1,844,776	1,087,272	10,820	1,098,092
Culture	941,818	1,624,342	373,782	220,300	5,470	225,770
Health	1,842,543	3,177,812	731,257	430,988	24,445	455,433
Total Governmental	\$ 14,681,474	\$ 25,320,966	\$ 5,826,687	\$ 3,434,129	\$ 17,314	\$ 3,451,443

The City of Bismarck Employees' Pension
Individual Cost-Sharing Employers Port

Deferred Outflows of Resources

Deferred Inflows of Resources

	Deferred Outflows of Resources					Deferred Inflows of Resources				
	Differences between expected and actual experience	Changes of assumptions	Net difference between projected and actual earnings on investments	Changes in Proportionate Share	Total	Differences between expected and actual experience	Changes of assumptions	Net difference between projected and actual earnings on investments	Changes in Proportionate Share	Total
Total	\$ 1,271,914	\$ 4,494,908	\$ 10,472,744	\$ 577,321	\$ 16,816,887	\$ (488,640)	\$ (70,122)	\$ -	\$ (577,321)	\$ (1,136,083)
Cost Allocations										
Administration	\$ 22,627	\$ 79,963	\$ 186,307	\$ 16,191	\$ 305,088	\$ (8,693)	\$ (1,247)	\$ -	\$ (11,317)	\$ (21,257)
Maintenance	17,088	60,389	140,702	\$ 10,929	229,108	(6,565)	(942)	-	(4,628)	(12,135)
Attorney	23,641	83,545	194,652	\$ 37,401	339,239	(9,082)	(1,303)	-	(12,089)	(22,474)
Civic Center	46,667	164,919	384,247	\$ 10,572	606,405	(17,928)	(2,573)	-	(26,094)	(46,595)
Combined Communications	57,208	202,173	471,046	\$ 3,520	733,947	(21,978)	(3,154)	-	(90,485)	(115,617)
Engineering	98,451	347,923	810,631	\$ 43,580	1,300,585	(37,823)	(5,428)	-	(3,808)	(47,059)
Finance	112,580	397,855	926,968	\$ 74,490	1,511,893	(43,251)	(6,207)	-	(38,031)	(87,489)
Fire and Inspections	7,994	28,250	65,819	\$ -	102,063	(3,071)	(441)	-	(16,043)	(19,555)
Forestry	-	-	-	\$ -	-	-	-	-	-	-
Human Resources	12,341	43,611	101,610	\$ 8,169	165,731	(4,741)	(680)	-	(12,730)	(18,151)
Municipal Court	9,934	35,105	81,792	\$ 2,108	128,939	(3,816)	(548)	-	(10,913)	(15,277)
Planning	68,896	243,478	567,282	\$ 7,097	886,753	(26,468)	(3,798)	-	(41,689)	(71,955)
Police	43,323	153,103	356,716	\$ 22,485	575,627	(16,644)	(2,388)	-	(2,451)	(21,483)
Public Health	79,232	280,005	652,387	\$ 67,145	1,078,769	(30,439)	(4,368)	-	(1,322)	(36,129)
Government Aide	16,247	57,418	133,779	\$ 48,187	255,631	(6,242)	(896)	-	(38,887)	(46,025)
Bismarck Public Library	48,805	172,474	401,850	\$ 29,938	653,067	(18,750)	(2,691)	-	(1,312)	(22,753)
Roads and Streets	120,083	424,369	988,743	\$ 55,573	1,588,768	(46,133)	(6,620)	-	(25,025)	(77,778)
Airport and Flightline	49,195	173,854	405,065	\$ 6,764	634,878	(18,900)	(2,712)	-	(26,284)	(47,896)
Public Works Operations	80,622	284,917	663,833	\$ 64,308	1,093,680	(30,973)	(4,445)	-	(9,689)	(45,107)
Public Works Utility Operations	150,109	530,480	1,235,971	\$ 28,203	1,944,763	(57,668)	(8,276)	-	(112,786)	(178,730)
Fleet Services	22,338	78,941	183,925	\$ 4,872	290,076	(8,582)	(1,232)	-	(21,559)	(31,373)
Parks and Recreation	184,532	652,136	1,519,419	\$ 35,789	2,391,876	(70,893)	(10,173)	-	(70,179)	(151,245)
	\$ 1,271,913	\$ 4,494,908	\$ 10,472,744	\$ 577,321	\$ 16,816,886	\$ (488,640)	\$ (70,122)	\$ -	\$ (577,321)	\$ (1,136,083)
Less Parks and Rec	(184,532)	(652,136)	(1,519,419)	(35,789)	(2,391,876)	70,893	10,173	-	70,179	151,245
TOTAL CITY OF BISMARCK	<u>1,087,381</u>	<u>3,842,772</u>	<u>8,953,325</u>	<u>541,532</u>	<u>14,425,010</u>	<u>(417,747)</u>	<u>(59,949)</u>	<u>-</u>	<u>(507,142)</u>	<u>(984,838)</u>

Allocation by Function

General Government	\$ 267,107	\$ 943,946	\$ 2,199,313	\$ 156,385	\$ 3,566,751	\$ (102,616)	\$ (14,725)	\$ -	\$ (131,397)	\$ (248,738)
Public Safety	108,525	383,526	893,581	26,005	1,411,637	(41,693)	(5,983)	-	(108,979)	(156,655)
Highway	240,872	851,233	1,983,299	104,025	3,179,429	(92,538)	(13,280)	-	(50,392)	(156,210)
Culture	48,805	172,474	401,850	29,938	653,067	(18,750)	(2,691)	-	(1,312)	(22,753)
Health	95,479	337,423	786,166	115,332	1,334,400	(36,681)	(5,264)	-	(40,209)	(82,154)
Total Governmental	\$ 760,788	\$ 2,688,602	\$ 6,264,209	\$ 431,685	\$ 10,145,284	\$ (292,278)	\$ (41,943)	\$ -	\$ (332,289)	\$ (666,510)

The City of Bismarck Employees' Pension
Individual Cost-Sharing Employers Port

	2023	2024	2025	2026	2027	Thereafter	
Total	\$ 2,075,046	\$ 3,273,257	\$ 3,654,653	\$ 5,370,706	\$ 780,840	\$ 526,302	
Cost Allocations							
Administration	\$ 41,015	\$ 57,330	\$ 64,380	\$ 96,075	\$ 14,228	\$ 10,803	
Maintenance	30,574	46,373	48,874	71,965	11,370	7,817	
Attorney	41,429	65,192	73,466	106,254	17,423	13,001	
Civic Center	73,033	115,769	129,885	195,648	25,717	19,758	
Combined Communications	73,955	124,328	144,574	224,573	29,179	21,721	
Engineering	172,861	260,607	292,032	423,017	63,591	41,418	
Finance	193,494	299,762	328,832	475,258	78,453	48,605	
Fire and Inspections	3,493	18,265	21,139	32,571	3,896	3,144	
Forestry	-	-	-	-	-	-	
Human Resources	19,891	31,036	34,926	50,745	7,095	3,887	
Municipal Court	13,546	24,964	26,889	40,389	4,747	3,127	
Planning	99,958	171,175	189,726	284,471	40,564	28,904	
Police	73,472	116,424	129,571	187,807	28,018	18,852	
Public Health	152,645	214,335	238,755	344,906	54,930	37,069	
Government Aide	27,225	47,896	52,500	69,261	10,623	2,101	
Bismarck Public Library	85,423	132,435	147,208	210,409	34,030	20,809	
Roads and Streets	200,242	316,472	354,745	510,737	80,046	48,748	
Airport and Flightline	74,717	124,215	138,732	205,425	26,323	17,570	
Public Works Operations	139,324	217,010	245,162	350,410	59,123	37,544	
Public Works Utility Operations	224,576	367,747	409,660	624,218	77,473	62,359	
Fleet Services	33,713	55,016	61,040	90,797	11,246	6,891	
Parks and Recreation	300,460	466,906	522,557	775,770	102,764	72,174	
	\$ 2,075,046	\$ 3,273,257	\$ 3,654,653	\$ 5,370,706	\$ 780,839	\$ 526,302	
Less Parks and Rec	(300,460)	(466,906)	(522,557)	(775,770)	(102,764)	(72,174)	
TOTAL CITY OF BISMARCK	<u>1,774,586</u>	<u>2,806,351</u>	<u>3,132,096</u>	<u>4,594,936</u>	<u>678,075</u>	<u>454,128</u>	13,440,172
Allocation by Function							
General Government	\$ 439,907	\$ 695,832	\$ 767,093	\$ 1,125,157	\$ 173,880	\$ 116,144	
Public Safety	150,920	259,017	295,284	444,951	61,093	43,717	
Highway	406,816	632,095	707,817	1,024,551	154,883	97,057	
Culture	85,423	132,435	147,208	210,409	34,030	20,809	
Health	179,870	262,231	291,255	414,167	65,553	39,170	
Total Governmental	\$ 1,262,936	\$ 1,981,610	\$ 2,208,657	\$ 3,219,235	\$ 489,439	\$ 316,897	



Actuarial Certification

GASB Statement Nos. 67 and 68 Disclosures as of December 31, 2022

These exhibits for the City of Bismarck Employees' Pension Plan (the "Plan") are intended to comply with the Government Accounting Standards Board Statements Numbers 67 and 68. Determinations for other purposes may be significantly different from those contained in this report; the results in this report should not be used for other purposes.

Our Actuarial Valuation has been completed with reliance upon participant information and financial information provided by the City. We have reviewed the data provided to us for general reasonableness but did not audit the data. The accuracy of the information in this report is dependent on the quality and completeness of the data provided to us. Each assumption not specified by statute or regulations is reasonable taking into account the experience of the Plan, Plan-specific features, the purpose of the measurement and reasonable expectations.

The actuarial assumptions used in this report were selected by the City, in consultation with Gallagher Benefit Services, Inc. Based on a review of historic experience, Plan-specific features, and anticipated future outlook, the actuarial assumptions not specified by statute or regulation, each and in the aggregate, are reasonably related to the experience of the Plan and reflect a reasonable estimate of anticipated experience under the Plan. Liabilities shown in this report were determined using actuarial valuation software designed for the specific purpose of modeling pension plan liabilities and costs. In our opinion, except as stated elsewhere in this report, the software is appropriate and produces reasonable results for this purpose.

The investment return assumption was changed from 7.50% as of January 1, 2022 to 7.25% as of December 31, 2022. There were no other changes in Plan provisions, cost allocation procedures, contribution allocation procedures, assumptions or methods from the previous measurement. There were no adjustments of prior measurements or use of approximations which would materially impact the results. The accrued benefits valued in this report reflect the benefit attribution pattern described by the plan provisions. Please see the forthcoming January 1, 2023 funding valuation for a description of all other assumptions and methods.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in Plan provisions or applicable law. Due to the limited scope of this engagement, we did not complete an analysis of the potential range of such future measurements.

To the best of our knowledge, the information contained in this report is complete, accurate and in accordance with generally accepted actuarial principles as recommended by the American Academy of Actuaries. The actuary indicated below is an Enrolled Actuary and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.

Edwin L. McNamara Jr., EA, MAAA
20-06568

March 15, 2023
Date

The City of Bismarck Employees' Pension Plan
Schedule of Changes in Net Pension Liability

Fiscal Year:	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Pension Liability										
Service Cost	\$ 1,894,480	\$ 2,025,734	\$ 2,190,985	\$ 2,602,337	\$ 2,731,493	\$ 2,997,689	\$ 3,062,376	\$ 3,206,349	\$ 2,899,200	\$ 2,914,400
Interest	5,481,444	5,716,895	6,192,444	6,846,732	7,266,151	8,098,573	8,559,224	8,918,281	9,313,987	9,758,635
Changes of benefit terms	-	753,175	-	-	-	-	-	-	-	-
Differences between expected and actual experience	(1,283,089)	1,172,019	3,884,241	492,910	(182,407)	282,336	(1,040,109)	178,035	860,766	518,712
Changes of assumptions	-	-	-	-	5,928,743	-	-	(122,712)	-	3,954,846
Benefit payments, including refunds of member contributions	(2,917,422)	(3,252,064)	(3,732,774)	(4,177,580)	(4,780,179)	(5,042,261)	(5,560,276)	(6,315,804)	(6,877,653)	(7,443,357)
Net change in total pension liability	\$ 3,175,413	\$ 6,415,759	\$ 8,534,896	\$ 5,764,399	\$ 10,963,801	\$ 6,336,337	\$ 5,021,215	\$ 5,864,149	\$ 6,196,300	\$ 9,703,236
Total Pension Liability--Beginning	<u>72,650,145</u>	<u>75,825,558</u>	<u>82,241,317</u>	<u>90,776,213</u>	<u>96,540,612</u>	<u>107,504,413</u>	<u>113,840,750</u>	<u>118,861,965</u>	<u>124,726,114</u>	<u>130,922,414</u>
Total Pension Liability--Ending (a)	75,825,558	82,241,317	90,776,213	96,540,612	107,504,413	113,840,750	118,861,965	124,726,114	130,922,414	140,625,650
Plan fiduciary net position										
Contributions - Employer	\$ 2,259,647	\$ 2,181,183	\$ 2,314,892	\$ 2,532,305	\$ 2,800,226	\$ 2,886,703	\$ 2,939,200	\$ 3,034,058	\$ 3,022,124	\$ 3,186,234
Contributions - Employee	1,000,345	1,059,009	1,216,077	1,289,288	1,308,511	1,346,630	1,365,868	1,401,930	1,417,105	1,492,188
Net investment income	9,336,336	4,893,235	867,726	5,800,080	12,938,266	(2,537,270)	15,519,785	11,698,867	16,724,323	(13,180,710)
Benefit payments, including refunds of member contributions	(2,917,422)	(3,252,064)	(3,732,774)	(4,177,580)	(4,780,179)	(5,042,261)	(5,560,276)	(6,315,804)	(6,877,653)	(7,443,357)
Administrative expense	(294,281)	(394,029)	(354,797)	(282,470)	(347,642)	(296,087)	(367,130)	(443,991)	(446,763)	(109,044)
Other	-	-	-	-	-	-	-	-	-	-
Net change in plan fiduciary net position	\$ 9,384,625	\$ 4,487,334	\$ 311,124	\$ 5,161,623	\$ 11,919,182	\$ (3,642,285)	\$ 13,897,447	\$ 9,375,060	\$ 13,839,137	\$ (16,054,689)
Plan fiduciary net position--beginning	<u>67,402,366</u>	<u>76,786,991</u>	<u>81,274,325</u>	<u>81,585,133</u>	<u>86,746,756</u>	<u>98,665,938</u>	<u>95,023,653</u>	<u>108,921,100</u>	<u>118,296,160</u>	<u>132,135,296</u>
Plan fiduciary net position--ending (b)	\$ 76,786,991	\$ 81,274,325	\$ 81,585,449	\$ 86,746,756	\$ 98,665,938	\$ 95,023,653	\$ 108,921,100	\$ 118,296,160	\$ 132,135,296	\$ 116,080,607
Net Pension Liability (asset)--ending (a) - (b)	\$ (961,433)	\$ 966,992	\$ 9,190,764	\$ 9,793,856	\$ 8,838,475	\$ 18,817,097	\$ 9,940,865	\$ 6,429,954	\$ (1,212,882)	\$ 24,545,043

The City of Bismarck Employees' Pension Plan
Schedule of Net Pension Liability

Fiscal Year:	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Pension Liability	\$ 75,825,558	\$ 82,241,317	\$ 90,776,213	\$ 96,540,612	\$ 107,504,413	\$ 113,840,750	\$ 118,861,965	\$ 124,726,114	\$ 130,922,414	\$ 140,625,650
Plan fiduciary net position	<u>76,786,991</u>	<u>81,274,325</u>	<u>81,585,449</u>	<u>86,746,756</u>	<u>98,665,938</u>	<u>95,023,653</u>	<u>108,921,100</u>	<u>118,296,160</u>	<u>132,135,296</u>	<u>116,080,607</u>
Net pension liability (asset)	\$ (961,433)	\$ 966,992	\$ 9,190,764	\$ 9,793,856	\$ 8,838,475	\$ 18,817,097	\$ 9,940,865	\$ 6,429,954	\$ (1,212,882)	\$ 24,545,043
Plan fiduciary net position as a percentage of the total pension liability	101.3%	98.8%	89.9%	89.9%	91.8%	83.5%	91.6%	94.8%	100.9%	82.5%
Covered-employee Payroll	\$ 20,372,796	\$ 21,850,884	\$ 25,581,345	\$ 26,587,289	\$ 26,971,817	\$ 27,247,919	\$ 28,170,781	\$ 28,310,578	\$ 28,863,264	\$ 28,515,711
Net pension liability (asset) as a percentage of covered-employee payroll	-4.7%	4.4%	35.9%	36.8%	32.8%	69.1%	35.3%	22.7%	-4.2%	86.1%

Discount Rate used to measure the Total Pension Liability

Sensitivity of the Net Pension Liability to changes in the Discount Rate

	1% Increase (8.25%)	Current Discount Rate (7.25%)	1% Decrease (6.25%)
Total Pension Liability	\$ 125,821,881	\$ 140,625,650	\$ 158,413,161
Plan fiduciary net position	<u>116,080,607</u>	<u>116,080,607</u>	<u>116,080,607</u>
Net Pension Liability	\$ 9,741,274	\$ 24,545,043	\$ 42,332,554

The City of Bismarck Employees' Pension Plan
Schedule of Contributions

City and Parks	Plan Year:	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Actuarially determined contribution		\$ 1,299,110	\$ 981,273	\$ 1,205,086	\$ 2,016,747	\$ 2,454,235	\$ 2,730,171	\$ 3,501,857	\$ 3,033,715	\$ 2,541,030	\$ 1,903,586
Contributions in relation to the actuarially determined contribution		<u>2,259,647</u>	<u>2,181,183</u>	<u>2,314,892</u>	<u>2,532,305</u>	<u>2,800,226</u>	<u>2,886,703</u>	<u>2,939,200</u>	<u>3,034,058</u>	<u>3,022,124</u>	<u>3,186,234</u>
Contribution deficiency (excess)		\$ (960,537)	\$ (1,199,910)	\$ (1,109,806)	\$ (515,558)	\$ (345,991)	\$ (156,532)	\$ 562,657	\$ (343)	\$ (481,094)	\$ (1,282,648)
Covered-employee Payroll		20,372,796	21,850,884	25,581,345	26,587,289	26,971,817	27,247,919	28,170,781	28,310,578	28,863,264	28,515,711
Contributions as a percentage of covered-employee payroll		11.1%	10.0%	9.0%	9.5%	10.4%	11%	10.4%	10.7%	10.5%	11.2%
Parks Only				2015	2016	2017	2018	2019	2020	2021	2022
Actuarially determined contribution				\$ 122,820	\$ 209,905	\$ 266,849	\$ 262,486	\$ 320,293	\$ 322,595	\$ 207,117	\$ 179,876
Contributions in relation to the actuarially determined contribution				<u>243,218</u>	<u>269,065</u>	<u>322,654</u>	<u>345,354</u>	<u>373,732</u>	<u>381,662</u>	<u>391,223</u>	<u>391,223</u>
Contribution deficiency (excess)				\$ (120,398)	\$ (59,160)	\$ (55,805)	\$ (82,868)	\$ (53,439)	\$ (59,067)	\$ (184,106)	\$ (211,347)
Covered-employee Payroll				2,512,248	2,953,755	3,223,952	3,490,169	3,518,193	3,756,434	3,990,385	3,876,516
Contributions as a percentage of covered-employee payroll				9.7%	9.1%	10.0%	9.9%	10.6%	10.2%	9.8%	10.1%

The City of Bismarck Employees' Pension Plan
Schedule of Investment Returns

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Annual weighted rate of return, net of investment expenses (contributions, benefit payments and administrative expense assumed to be paid mid-year)	13.9%	6.4%	1.1%	7.1%	15.0%	-2.6%	16.5%	10.9%	14.3%	-10.1%

The City of Bismarck Employees' Pension Plan

Components of Pension Expense for the Fiscal Year Ended December 31

Description	FYE 2021	FYE 2022
Service Cost	\$ 2,899,200	\$ 2,914,400
Interest on the total pension liability	9,313,987	9,758,635
Differences between expected and actual experience	678,519	318,985
Changes of assumptions	783,651	1,365,246
Employee contributions	(1,417,105)	(1,492,188)
Projected earnings on pension plan investments	(8,764,017)	(9,802,373)
Differences between projected and actual earnings on plan investments	(3,321,158)	2,569,557
Pension plan administrative expenses	446,763	109,044
Other changes in fiduciary net position	-	-
	\$ 619,840	\$ 5,741,306

Projected earnings on pension plan investments	Amount for Period (a)	Portion of Period (b)	Projected Rate of Return (c)	Projected Earnings (a) x (b) x (c)
Beginning plan fiduciary net position	\$ 132,135,296	100%	7.50%	\$ 9,910,147
Employer contributions	3,186,234	50%	7.50%	119,484
Employee contributions	1,492,188	50%	7.50%	55,957
Benefit payments, including refunds of employee contributions	(7,443,357)	50%	7.50%	(279,126)
Administrative expense	(109,044)	50%	7.50%	(4,089)
Total projected earnings				\$ 9,802,373

Interest cost on total pension liability	Amount for Period (a)	Portion of Period (b)	Interest Rate (c)	Interest on the Total Pension Liability (a) x (b) x (c)
Beginning total pension liability	\$ 130,922,414	100%	7.50%	\$ 9,819,181
Service cost	2,914,400	100%	7.50%	218,580
Benefit payments, including refunds of employee contributions	(7,443,357)	50%	7.50%	(279,126)
Total interest on the total pension liability				\$ 9,758,635



The City of Bismarck Employees' Pension Plan

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Year	Differences		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	Between Expected and Actual Experience	Recognition Period (Years)											
2010	\$ (232,818)	8.1	\$ (2,874)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2011	(1,488,543)	7.4	(80,465)	-	-	-	-	-	-	-	-	-	-
2012	204,436	7.3	28,005	8,401	-	-	-	-	-	-	-	-	-
2013	(1,283,089)	7.4	(173,390)	(173,390)	(69,359)	-	-	-	-	-	-	-	-
2014	1,172,019	7.4	158,381	158,381	158,381	63,352	-	-	-	-	-	-	-
2015	3,884,241	7.3	532,088	532,088	532,088	532,088	159,625	-	-	-	-	-	-
2016	492,910	7.4	66,609	66,609	66,609	66,609	66,609	26,647	-	-	-	-	-
2017	(182,407)	7.4	(24,650)	(24,650)	(24,650)	(24,650)	(24,650)	(24,650)	(9,857)	-	-	-	-
2018	282,336	7.2	39,213	39,213	39,213	39,213	39,213	39,213	39,213	7,845	-	-	-
2019	(1,040,109)	7.1	-	(146,494)	(146,494)	(146,494)	(146,494)	(146,494)	(146,494)	(146,494)	(14,651)	-	-
2020	178,035	7.0	-	-	25,434	25,434	25,434	25,434	25,434	25,434	25,431	-	-
2021	860,766	7.0	-	-	-	122,967	122,967	122,967	122,967	122,967	122,967	122,964	-
2022	518,712	6.8	-	-	-	-	76,281	76,281	76,281	76,281	76,281	76,281	61,026
Net Increase (decrease) in pension expense			\$ 542,917	\$ 460,158	\$ 581,222	\$ 678,519	\$ 318,985	\$ 119,398	\$ 107,544	\$ 86,033	\$ 210,028	\$ 199,245	\$ 61,026

Deferred outflows of resources and deferred inflows of resources arising from differences between expected and actual experience

Year	Balances at December 31, 2022				
	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in Pension Expense through December 31, 2022 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2010	\$ -	\$ (232,818)	\$ (232,818)	\$ -	\$ -
2011	-	(1,488,543)	(1,488,543)	-	-
2012	204,436	-	204,436	-	-
2013	-	(1,283,089)	(1,283,089)	-	-
2014	1,172,019	-	1,172,019	-	-
2015	3,884,241	-	3,884,241	-	-
2016	492,910	-	466,263	26,647	-
2017	-	(182,407)	(147,900)	-	(34,507)
2018	282,336	-	196,065	86,271	-
2019	-	(1,040,109)	(585,976)	-	(454,133)
2020	178,035	-	76,302	101,733	-
2021	860,766	-	245,934	614,832	-
2022	518,712	-	76,281	442,431	-
				\$ 1,271,914	\$ (488,640)

The City of Bismarck Employees' Pension Plan

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Year	Changes of Assumptions	Recognition Period (Years)	Recognition													
			2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028			
2011	\$(4,868,338)	7.4	\$ (263,150)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2012	-	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2013	-	7.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2014	-	7.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2015	-	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2016	-	7.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2017	5,928,743	7.4	801,181	801,181	801,181	801,181	801,181	801,181	801,181	320,476	-	-	-	-	-	-
2018	-	7.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019	-	7.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	(122,712)	7.0	-	-	(17,530)	(17,530)	(17,530)	(17,530)	(17,530)	(17,530)	(17,530)	(17,532)	-	-	-	-
2021	-	7.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2022	3,954,846	6.8	-	-	-	-	-	581,595	581,595	581,595	581,595	581,595	581,595	581,595	581,595	465,276
Net Increase (decrease) in pension expense			\$ 538,031	\$ 801,181	\$ 783,651	\$ 783,651	\$ 1,365,246	\$ 1,365,246	\$ 884,541	\$ 564,065	\$ 564,063	\$ 581,595	\$ 581,595	\$ 465,276		

Deferred outflows of resources and deferred inflows of resources arising from changes of assumptions

Year	Balances at December 31, 2022				
	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in		
			Pension Expense through December 31, 2022 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2011	\$ -	\$ (4,868,338)	\$ (4,868,338)	\$ -	\$ -
2012	-	-	-	-	-
2013	-	-	-	-	-
2014	-	-	-	-	-
2015	-	-	-	-	-
2016	-	-	-	-	-
2017	5,928,743	-	4,807,086	1,121,657	-
2018	-	-	-	-	-
2019	-	-	-	-	-
2020	-	(122,712)	(52,590)	-	(70,122)
2021	-	-	-	-	-
2022	3,954,846	-	581,595	3,373,251	-
				\$ 4,494,908	\$ (70,122)

The City of Bismarck Employees' Pension Plan

Increase (Decrease) in Pension Expense Arising from the Recognition of Differences between Projected and Actual Earnings on Pension Plan Investments

Year	Differences Between Projected and Actual Earnings on Pension Plan Investments		Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	2025	2026									
2014	\$	850,568	5.0	\$ 170,112	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -									
2015		5,206,976	5.0	1,041,395	1,041,395	1	-	-	-	-	-	-									
2016		294,863	5.0	58,973	58,973	58,971	-	-	-	-	-	-									
2017		(6,470,476)	5.0	(1,294,095)	(1,294,095)	(1,294,095)	(1,294,096)	-	-	-	-	-									
2018		9,895,777	5.0	1,979,155	1,979,155	1,979,155	1,979,155	1,979,157	-	-	-	-									
2019		(8,453,848)	5.0	-	(1,690,770)	(1,690,770)	(1,690,770)	(1,690,770)	(1,690,768)	-	-	-									
2020		(3,616,928)	5.0	-	-	(723,386)	(723,386)	(723,386)	(723,386)	(723,384)	-	-									
2021		(7,960,306)	5.0	-	-	-	(1,592,061)	(1,592,061)	(1,592,061)	(1,592,061)	(1,592,062)	-									
2022		22,983,083	5.0	-	-	-	-	4,596,617	4,596,617	4,596,617	4,596,617	4,596,615									
Net Increase (decrease) in pension expense				\$	1,955,540	\$	94,658	\$	(1,670,124)	\$	(3,321,158)	\$	2,569,557	\$	590,402	\$	2,281,172	\$	3,004,555	\$	4,596,615

Deferred outflows of resources and deferred inflows of resources arising from differences between expected and actual experience

Balances at December 31, 2022					
Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in		
			Pension Expense through December 31, 2022 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2014	\$ 850,568	\$ -	\$ 850,568	\$ -	\$ -
2015	5,206,976	-	5,206,976	-	-
2016	294,863	-	294,863	-	-
2017	-	(6,470,476)	(6,470,476)	-	-
2018	9,895,777	-	9,895,777	-	-
2019	-	(8,453,848)	(6,763,080)	-	(1,690,768)
2020	-	(3,616,928)	(2,170,158)	-	(1,446,770)
2021	-	(7,960,306)	(3,184,122)	-	(4,776,184)
2022	22,983,083	-	4,596,617	18,386,466	-
				18,386,466	(7,913,722)

The City of Bismarck Employees' Pension Plan
 Deferred Outflows of Resources and Deferred Inflows of Resources

Source	Balances at December 31, 2022	
	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 1,271,914	\$ (488,640)
Changes of assumptions	4,494,908	(70,122)
Net difference between projected and actual earnings on investments	10,472,744	-
Total	16,239,566	(558,762)

Deferred outflows of resources and deferred inflows of resources will be recognized in pension expense as follows:

Year	
2023	2,075,046
2024	3,273,257
2025	3,654,653
2026	5,370,706
2027	780,840
2028	526,302