



DECEMBER 31, 2015 ACTUARIAL VALUATION OF PENSION BENEFITS

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Foster & Foster



Agenda – Overview of Pension Liability

- I. District Liability
- II. Funded Ratio
- III. Components of the Change in Unfunded Liability
- IV. District Funding Progress

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District Liability (\$ thousands)

District's Pension Benefits

The District's Pension Benefits include retirement benefits for qualifying employees and their eligible spouses and dependents.

Accrued Liability

The present value of all retirement benefits that is expected to be paid to plan members based on both past and projected future service is known as the Present Value of Future Benefits (PVFB).

The portion of the PVFB that is attributable to past service is the Accrued Liability (AL).

The following table summarizes the Accrued Liability as of December 31, 2015 and one year prior:

Membership Data	December 31, 2015	December 31, 2014
Active members - tier 1	1,572	1,671
Active members - tier 2	272	202
Active members - total	1,846	1,873
Retirees, survivors and dependents	2,359	2,343
Inactive members	130	115
Funding Interest Rate	7.50%	7.50%
Accrued Liability (\$ thousands)		
Active members	\$ 741,591	\$ 743,484
Retirees, survivors and dependents	1,616,195	1,541,327
Inactive members	13,245	11,648
Total	\$ 2,371,031	\$ 2,296,439

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Funded Ratio (\$ thousands)

Funded Ratio

The Unfunded Liability represents the amount by which the Accrued Liability exceeds the value of the Plan Assets that have been placed in a trust and dedicated to providing benefits to retirees and their beneficiaries.

The Funded Ratio is the percentage of the Accrued Liability that is covered by the Plan Assets.

The Funded Ratio = Actuarial Value of Assets/Accrued Liability.

Actuarial Value of Assets is the Plan Assets adjusted to smooth gains and losses for the previous five years.

The following table summarizes the Funded Ratio as of December 31, 2015 and one year prior:

	December 31, 2015	December 31, 2014
Accrued Liability (\$ thousands)	\$ 2,371,031	\$ 2,296,439
Actuarial Value of Assets	\$ 1,307,982	\$ 1,263,287
Unfunded Liability	\$ 1,063,049	\$ 1,033,152
Funded Ratio	55.2%	55.0%
Unfunded Ratio	44.8%	45.0%

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Components of the Change in Unfunded Actuarial Accrued Liability (\$ thousands)

Reconciliation of the Changes in Unfunded Liability

Liability (UAAL) as of December 31, 2014	\$ 1,033,152
Expected UAAL as Unfunded Actuarial Accrued of December 31, 2015	1,050,223
Increase in UAAL due to investment return lower than expected	3,056
Decrease in UAAL due to salary increases lower than assumed	(3,201)
Increase in UAAL due to decrement experience	13,848
Decrease in UAAL due to other sources	(876)
Total increase/(decrease) in UAAL	\$ 12,827
Unfunded Actuarial Accrued Liability as of December 31, 2015	\$ 1,063,049

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District Funding Progress (\$ thousands)

Schedule of Employer Contributions

Fiscal Year	Annual Required	Actual	Percentage
December 31	Contributions	Contributions	Contributed
2009	\$ 54,790	\$ 32,154	59%
2010	\$ 61,873	\$ 29,918	48%
2011	\$ 69,393	\$ 37,379	54%
2012	\$ 74,829	\$ 65,098	87%
2013	\$ 74,774	\$ 92,944	124%
2014	\$ 69,924	\$ 73,906	106%
2015	\$ 62,604	\$ 71,041	113%

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District Funding Progress (\$ thousands)						
Schedule of Funding Progress						
Fiscal Year	Actuarial Value of Assets AIA (A)	Actuarial Accrued Liability AAL (B)	Unfunded AAL (UAA) (B) - (A)	Funded Ratio (B)/(A)	Covered Payroll (C) (B)/(B)(1)	UAA as % of Payroll (B)/(B)(1)
2006	\$1,209,602	\$1,724,705	\$515,103	70.1%	\$152,767	337.2%
2007	1,256,890	1,795,177	538,287	70.0%	158,832	338.9%
2008	1,211,838	1,852,290	640,441	65.4%	107,865	381.5%
2009	1,177,810	1,938,172	761,362	60.7%	178,915	430.4%
2010	1,151,595	2,036,680	885,085	56.5%	174,486	507.3%
2011	1,097,397	2,101,319	1,003,922	52.2%	164,275	611.1%
2012	1,076,740	2,136,585	1,059,768	50.4%	163,817	646.9%
2013	1,188,504	2,194,912	1,006,408	54.1%	163,376	594.2%
2014	1,263,287	2,296,439	1,033,152	55.1%	176,184	586.4%
2015	1,307,982	2,371,031	1,063,049	55.2%	177,782	597.9%

District Funding Progress Funding Projection						
Based on December 31, 2015 valuation results and assumptions:						
Interest rate = 7.50%						
Assumed investment experience = 7.50%						
Mortality: RP-2000 Combined Healthy, with Generational Mortality Improvements (Scale AA) for healthy lives; RP-2000 Disabled Retiree Mortality Table for disabled lives						
Salary increases: Between 4.25% and 7.00% per year based on years of service						
Assumed Funding Policy: District contributes Statutory Maximum contribution (4.19 x member contributions from two years prior)						
Observations:						
Funded Ratio increases from 55.2% as of December 31, 2015 to 104.9% as of December 31, 2050						
Unfunded Actuarial Accrued Liability begins to be paid down steadily in 2021 and is projected to be zero by 2050.						

District Funding Progress Funding Projection Summary of Funding Projections (\$ Millions)						
Fiscal Year	ACTUARIAL DETERMINED CONTRIBUTION	DISTRICT POLICY CONTRIBUTION	CONTRIBUTION IN EXCESS OF REQUIREMENT	% EXCESS OF REQUIREMENT	PROJECTED FUNDING RATIO	
2016	\$64.6	\$78.5	\$14.9	123.1%	56.0%	
2017	65.2	89.6	24.4	137.4%	56.9%	
2018	66.1	86.8	20.7	131.3%	57.0%	
2019	69.3	90.2	20.9	130.2%	57.0%	
2020	72.7	91.7	19.0	126.1%	57.9%	
2021	76.0	92.9	17.9	123.9%	58.7%	
2022	77.5	94.2	16.7	121.5%	59.6%	
2023	80.0	95.4	15.4	119.3%	60.5%	
2024	82.6	96.4	13.8	116.7%	61.3%	
2025	85.4	97.5	12.1	114.2%	62.2%	
Total	\$738.4	\$914.2	\$175.8	123.8%		

District Funding Progress Funding Projection						
Year	Pension Payroll	Total Payroll	Employee Payroll	Employer Payroll	as % of Statutory Payroll Tax Levy	Funding Policy Max. Contrib. Contrib.
2015	\$177.8	\$177.8	\$146.4	\$20.7	\$79.5	44.7%
2016	\$177.8	\$177.8	\$146.4	\$20.7	\$79.5	44.7%
2017	\$184.8	\$184.8	\$149.9	\$21.5	\$89.6	48.2%
2018	\$188.8	\$188.8	\$155.4	\$21.9	\$88.8	45.5%
2019	\$194.5	\$194.5	\$160.9	\$22.2	\$90.2	46.2%
2020	\$199.3	\$199.3	\$166.7	\$22.5	\$91.7	45.8%
2021	\$203.8	\$203.8	\$172.7	\$22.8	\$92.9	45.4%
2022	\$208.2	\$208.2	\$178.7	\$23.0	\$94.2	44.5%
2023	\$212.6	\$212.6	\$184.8	\$23.3	\$95.4	44.4%
2024	\$216.8	\$216.8	\$190.9	\$23.5	\$96.4	43.9%
2025	\$220.9	\$220.9	\$196.9	\$23.7	\$97.5	43.3%
2026	\$225.0	\$225.0	\$202.9	\$23.9	\$98.4	42.8%
2027	\$229.2	\$229.2	\$208.8	\$24.1	\$99.3	42.2%
2028	\$233.3	\$233.3	\$214.5	\$24.3	\$100.2	41.5%
2029	\$237.4	\$237.4	\$220.4	\$24.6	\$101.1	40.9%
2030	\$241.5	\$241.5	\$226.9	\$24.7	\$102.0	40.4%
2031	\$245.6	\$245.6	\$233.3	\$24.9	\$102.9	39.8%
2032	\$249.4	\$249.4	\$239.6	\$25.1	\$103.8	39.2%
2033	\$253.1	\$253.1	\$245.5	\$25.2	\$104.3	38.6%
2034	\$256.2	\$256.2	\$251.6	\$25.3	\$105.0	38.0%
2035	\$259.6	\$259.6	\$257.6	\$25.5	\$105.6	37.4%

District Funding Progress Funding Projection						
Year	Pension Payroll	Total Payroll	Employee Payroll	Employer Payroll	as % of Statutory Payroll Tax Levy	Funding Policy Max. Contrib. Contrib.
2036	\$262.0	\$262.0	\$263.6	\$106.2	36.8%	\$58.2
2037	\$265.3	\$265.3	\$268.5	\$106.8	36.2%	\$57.5
2038	\$268.7	\$268.7	\$273.9	\$107.4	35.7%	\$56.5
2039	\$272.1	\$272.1	\$279.9	\$108.0	35.1%	\$55.3
2040	\$275.7	\$275.7	\$286.4	\$108.7	34.5%	\$53.8
2041	\$279.2	\$279.2	\$293.6	\$109.3	33.9%	\$51.4
2042	\$282.7	\$282.7	\$301.3	\$110.1	33.4%	\$48.3
2043	\$286.1	\$286.1	\$309.6	\$110.8	32.9%	\$44.0
2044	\$289.4	\$289.4	\$318.6	\$111.6	32.3%	\$38.1
2045	\$293.0	\$293.0	\$328.2	\$112.3	31.7%	\$29.5
2046	\$296.5	\$296.5	\$338.4	\$113.0	31.2%	\$16.8
2047	\$300.0	\$300.0	\$349.1	\$113.8	30.6%	\$8.8
2048	\$303.8	\$303.8	\$360.2	\$114.7	30.1%	\$0.7
2049	\$307.2	\$307.2	\$371.8	\$115.7	29.6%	\$0.7
2050	\$311.0	\$311.0	\$384.0	\$116.5	29.1%	\$0.7
2051	\$315.1	\$315.1	\$396.7	\$117.4	28.3%	\$0.6

District Funding Progress Funding Projection						
Year	Pension Payroll	Total Payroll	Employee Payroll	Employer Payroll	as % of Statutory Payroll Tax Levy	Funding Policy Max. Contrib. Contrib.
2036	\$262.0	\$262.0	\$263.6	\$106.2	36.8%	\$58.2
2037	\$265.3	\$265.3	\$268.5	\$106.8	36.2%	\$57.5
2038	\$268.7	\$268.7	\$273.9	\$107.4	35.7%	\$56.5
2039	\$272.1	\$272.1	\$279.9	\$108.0	35.1%	\$55.3
2040	\$275.7	\$275.7	\$286.4	\$108.7	34.5%	\$53.8
2041	\$279.2	\$279.2	\$293.6	\$109.3	33.9%	\$51.4
2042	\$282.7	\$282.7	\$301.3	\$110.1	33.4%	\$48.3
2043	\$286.1	\$286.1	\$309.6	\$110.8	32.9%	\$44.0
2044	\$289.4	\$289.4	\$318.6	\$111.6	32.3%	\$38.1
2045	\$293.0	\$293.0	\$328.2	\$112.3	31.7%	\$29.5
2046	\$296.5	\$296.5	\$338.4	\$113.0	31.2%	\$16.8
2047	\$300.0	\$300.0	\$349.1	\$113.8	30.6%	\$8.8
2048	\$303.8	\$303.8	\$360.2	\$114.7	30.1%	\$0.7
2049	\$307.2	\$307.2	\$371.8	\$115.7	29.6%	\$0.7
2050	\$311.0	\$311.0	\$384.0	\$116.5	29.1%	\$0.7
2051	\$315.1	\$315.1	\$396.7	\$117.4	28.3%	\$0.6

DECEMBER 31, 2015 ACTUARIAL VALUATION OF RETIREE HEALTH CARE BENEFITS

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Agenda – Overview of Other Postemployment Benefits (OPEB) Liability

- I. District Liability
- II. Funded Ratio
- III. Components of the Change in Unfunded Liability
- IV. District Funding Progress

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District Liability (\$ thousands)

District's Other Postemployment Benefits (OPEB)

The District's Other Postemployment Benefits include retiree health care benefits for qualifying employees and their eligible spouses and dependents. These benefits include medical and prescription drug coverage only. No dental, life or disability benefits are paid by the plan.

Accrued Liability

The present value of all postretirement benefits that is expected to be paid to plan members based on both past and projected future service is known as the Present Value of Future Benefits (PVFB).

The portion of the PVFB that is attributable to past service is the Actuarial Accrued Liability (AAL).

The following table summarizes the Actuarial Accrued Liability as of December 31, 2015 and two years prior:

Membership Data	December 31, 2015	December 31, 2013
Active members	1,838	1,875
Retirees and survivors	1,962	1,964
Dependent spouses	813	844
Terminated Vested	41	N/A
GASB 43 Discount Rate	6.75%	7.00%
Actuarial Accrued Liability		
Active members	\$ 63,999	\$ 104,689
Retirees, survivors, dependents and TV's	222,627	215,172
Total	\$ 286,646	\$ 280,364

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Funded Ratio (\$ thousands)

Funded Ratio

The Unfunded Liability represents the amount by which the Actuarial Accrued Liability exceeds the value of the Plan Assets that have been placed in a trust and dedicated to providing benefits to retirees and their beneficiaries.

The Funded Ratio is the percentage of the Actuarial Accrued Liability that is covered by the Plan Assets.

The Funded Ratio = Plan Assets/Actuarial Accrued Liability.

The following table summarizes the Funded Ratio as of December 31, 2015 and two years prior:

	December 31, 2015	December 31, 2013
Accrued Liability	\$ 286,646	\$ 280,364
Retiree Healthcare Trust Assets	\$ 149,329	\$ 120,883
Unfunded Liability	\$ 137,317	\$ 139,481
Funded Ratio	52.1%	46.4%
Unfunded Ratio	47.9%	53.6%

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Components of the Change in Unfunded Actuarial Liability (\$ thousands)

Reconciliation of the Changes in Unfunded Liability

Increase in UAAL due to Changes in Census Data	\$	34,905
Decrease in UAAL due to Net Claims Costs lower than expected		(19,625)
Increase in UAAL due to Updated Trend Rate assumption		1,907
Decrease in UAAL due to Update Retirement and Termination Rates		(11,568)
Increase in UAAL due to Active Plan Election Assumption updated based on enrollment data		1,616
Increase in UAAL due to Investment Return lower than expected		16,334
Increase in UAAL due to Discount Rate lowered by 25 basis points (from 7% to 6.75%)		9,418
Decrease in UAAL due to Change from Projected Unit Credit to Entry Age cost method		(1,550)
Decrease in UAAL due to Updates to Active Retirees Eligibility Definition		(581)
Increase in UAAL due to Addition of Terminated Vested Benefit for Actives		3,266
Increase in UAAL due to Addition of Terminated Vested Benefit for 41 Inactives		3,722
Decrease in UAAL due to Update Salary Scale Assumption (for Entry Age Normal cost method)		(15,307)
Total Change in UAAL	\$	22,317

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District Funding Progress (\$ thousands)

Fiscal Year	Annual Required	Actual	Percentage
31-Dec	Contributions	Contributions	Contributed
2007	\$44,739	\$37,334	83%
2008	\$44,739	\$35,819	80%
2009	\$39,847	\$14,592	37%
2010	\$39,847	\$15,517	39%
2011	\$27,264	\$16,020	60%
2012	\$27,264	\$35,426	130%
2013	\$13,212	\$33,635	256%
2014	\$13,212	\$33,717	256%
2015	\$12,472	\$18,317	147%

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District Funding Progress (\$ thousands)

Schedule of Funding Progress

Fiscal Year	Actuarial Value	Accrued	Unfunded	Funded	Covered	UAAL as a
Ended Dec	of Assets (a)	Liability (AAL)	AAL (UAAL)	Ratio	Payroll (c)	Percentage of
31	(b)	(b)	(b-a)	(a/b)		Covered Payroll [(b-a)/c]
2007	\$25,025	\$442,683	\$417,658	5.70%	\$158,832	263.00%
2008	\$47,797	\$487,820	\$440,023	9.80%	\$167,865	262.10%
2009	\$47,891	\$526,476	\$478,585	9.10%	\$170,392	280.90%
2010	\$52,153	\$555,679	\$503,526	9.40%	\$172,273	292.30%
2011	\$54,986	\$394,676	\$339,690	13.90%	\$162,853	208.60%
2012	\$36,102	\$408,049	\$321,947	21.10%	\$158,995	202.50%
2013	\$120,883	\$280,364	\$139,481	46.40%	\$164,005	85.00%
2014	\$148,375	\$289,970	\$123,596	54.20%	\$169,909	72.70%
2015	\$149,329	\$286,646	\$137,317	62.10%	\$176,757	77.70%

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Current Advance Funding Policy

The District's Board of Commissioners (BOC) established a partial funding policy to advance fund retiree health care costs. The District believes that advance funding will establish a reserve that will help ensure the financial ability to provide health care coverage for District retirees and their beneficiaries in the future. The policy is as follows:

Target Funding Level: 100% (maximum funding level)
Funding Period: 12 years
Funding Amount: \$5 million funding in each of the twelve years 2015 through 2026.

Basis for Funding: No further advance funding contributions will be required after 2026. Beginning in 2027, cash to be withdrawn from the Trust to fund claims and insurance premiums will be determined by the Plan's actuary with the funding percentage to be maintained at 100% for all future years.

Benchmark: Progress toward the funding goal will be determined by an actuarial projection to be performed by the Plan's actuary every two years. The funded ratio will be calculated as part of this projection, and will serve as the benchmark to determine progress toward the funding goal.

There is currently no legal requirement for the District to partially or fully fund the Other Postemployment Benefits (OPEB) Trust Fund and any funding is on a voluntary basis.

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District Funding Progress Funding Projection

Metropolitan Water Reclamation District
Cash/Expense Advance Funding OPEB Contribution Projection
Assume \$5 million additional contribution each year until 100% funded

Year	Accrued Liability	Assets	BOYD Net OPEB Obligation (Asset)	Total Cash Contributions	Payee Waiver Costs during Year	Additional Contribution	Funded Ratio
2015	266,644,272	149,328,924	25,001,057	18,316,713	13,316,713	5,000,000	52%
2016	267,881,540	148,529,925	18,316,600	18,946,257	13,946,257	5,000,000	55%
2017	304,440,122	180,765,652	11,696,768	19,477,902	14,477,902	5,000,000	59%
2018	316,243,720	198,075,234	3,744,096	20,199,471	15,199,471	5,000,000	62%
2019	330,034,728	216,562,466	13,472,238	21,474,940	16,474,940	5,000,000	66%
2020	340,693,733	236,266,121	16,419,551	22,312,527	17,312,527	5,000,000	69%
2021	350,916,265	257,360,268	29,505,731	23,507,049	18,507,049	5,000,000	73%
2022	360,939,409	279,844,721	45,103,681	24,656,752	19,656,752	5,000,000	76%
2023	370,755,510	303,845,273	66,164,501	25,709,024	20,709,024	5,000,000	82%
2024	380,140,428	329,464,202	78,779,370	27,039,732	22,039,732	5,000,000	87%
2025	389,911,434	356,801,711	69,313,330	28,254,357	23,254,357	5,000,000	92%
2026	397,224,946	386,081,359	122,681,751	29,339,407	24,339,407	5,000,000	97%
2027	403,156,970	405,156,970	135,743,594	18,736,405	25,354,397	6,617,992	100%
2028	412,795,111	412,795,111	136,965,471	6,411,400	25,822,858	19,014,758	100%
2029	420,691,322	420,691,322	139,190,081	8,206,375	27,467,914	19,262,539	100%
2030	427,653,432	427,653,432	140,911,596	7,940,119	28,966,526	20,068,187	100%
2031	434,198,214	434,198,214	141,794,940	1,539,260	29,956,323	21,547,063	100%
2032	441,139,213	441,139,213	143,460,821	8,448,649	30,877,565	21,568,910	100%
2033	447,692,197	447,692,197	144,614,420	8,449,016	30,900,152	22,468,776	100%
2034	454,066,129	454,066,129	146,671,231	9,261,989	32,267,881	22,983,892	100%
2035	459,813,822	459,813,822	148,233,342	9,394,548	31,421,827	24,027,279	100%

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District Funding Progress Funding Projection

Metropolitan Water Reclamation District
Cash/Expense Advance Funding OPEB Contribution Projection
Assume \$5 million additional contribution each year until 100% funded

Year	Accrued Liability	Assets	BOYD Net OPEB Obligation (Asset)	Total Cash Contributions	Payee Waiver Costs during Year	Additional Contribution	Funded Ratio
2016	403,156,970	405,156,970	135,743,594	33,657,603	24,830,693	100%	
2017	412,795,111	412,795,111	136,965,471	6,411,400	25,822,858	100%	
2018	420,691,322	420,691,322	139,190,081	8,206,375	27,467,914	100%	
2019	427,653,432	427,653,432	140,911,596	7,940,119	28,966,526	100%	
2020	434,198,214	434,198,214	141,794,940	1,539,260	29,956,323	100%	
2021	441,139,213	441,139,213	143,460,821	8,448,649	30,877,565	100%	
2022	447,692,197	447,692,197	144,614,420	8,449,016	30,900,152	100%	
2023	454,066,129	454,066,129	146,671,231	9,261,989	32,267,881	100%	
2024	459,813,822	459,813,822	148,233,342	9,394,548	31,421,827	100%	
2025	465,561,515	465,561,515	149,800,453	9,527,107	32,579,774	100%	
2026	471,309,208	471,309,208	151,367,564	9,659,666	33,734,721	100%	
2027	477,056,901	477,056,901	152,934,675	9,792,215	34,889,668	100%	
2028	482,804,594	482,804,594	154,501,786	9,924,709	36,044,610	100%	
2029	488,552,287	488,552,287	156,068,897	10,057,203	37,199,552	100%	
2030	494,299,980	494,299,980	157,636,008	10,189,697	38,354,494	100%	
2031	500,047,673	500,047,673	159,203,119	10,322,191	39,509,436	100%	
2032	505,795,366	505,795,366	160,770,230	10,454,685	40,664,378	100%	
2033	511,543,059	511,543,059	162,337,341	10,587,179	41,819,320	100%	
2034	517,290,752	517,290,752	163,904,452	10,719,673	42,974,262	100%	
2035	523,038,445	523,038,445	165,471,563	10,852,167	44,129,204	100%	
2036	528,786,138	528,786,138	167,038,674	10,984,661	45,284,146	100%	
2037	534,533,831	534,533,831	168,605,785	11,117,155	46,439,088	100%	
2038	540,281,524	540,281,524	170,172,896	11,249,649	47,594,030	100%	
2039	546,029,217	546,029,217	171,740,007	11,382,143	48,748,972	100%	
2040	551,776,910	551,776,910	173,307,118	11,514,637	49,903,914	100%	
2041	557,524,603	557,524,603	174,874,229	11,647,131	51,058,856	100%	
2042	563,272,296	563,272,296	176,441,340	11,779,625	52,213,798	100%	
2043	569,020,000	569,020,000	178,008,451	11,912,119	53,368,740	100%	
2044	574,767,693	574,767,693	179,575,562	12,044,613	54,523,682	100%	
2045	580,515,386	580,515,386	181,142,673	12,177,107	55,678,624	100%	
2046	586,263,079	586,263,079	182,709,784	12,309,601	56,833,566	100%	
2047	592,010,772	592,010,772	184,276,895	12,442,095	57,988,508	100%	
2048	597,758,465	597,758,465	185,844,006	12,574,589	59,143,450	100%	
2049	603,506,158	603,506,158	187,411,117	12,707,083	60,298,392	100%	
2050	609,253,851	609,253,851	188,978,228	12,839,577	61,453,334	100%	
2051	615,001,544	615,001,544	190,545,339	12,972,071	62,608,276	100%	
2052	620,749,237	620,749,237	192,112,450	13,104,565	63,763,218	100%	
2053	626,496,930	626,496,930	193,679,561	13,237,059	64,918,160	100%	
2054	632,244,623	632,244,623	195,246,672	13,369,553	66,073,102	100%	
2055	638,000,000	638,000,000	196,813,783	13,502,047	67,228,044	100%	

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Questions...