

SECTOR IN-DEPTH

27 March 2017

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State and Local Governments - US

GASB Pension Accounting Can Skew Debt Service Coverage

"Pension expense" reporting under Governmental Accounting Standards Board (GASB) Statement 68 raises the potential for significant volatility in debt service coverage, a critical indicator of annual financial performance for government enterprises. The recent accounting update is a material reporting change, but does not constitute a credit event. Nonetheless, since reported pension expense now reflects complex accounting recognition rules, we instead rely on annual cash contributions for debt service coverage calculations and gauge any additional pension risk using other metrics. Our debt service coverage adjustment applies to sectors such as water and sewer utilities, public power, public higher education, mass transit, airports, ports and toll roads, beginning in most cases with fiscal 2015 reporting.

- » **Reported pension expense can exhibit misleading volatility.** Factors such as assumption changes and investment performance under GASB 68 can drive significant differences between reported expense and cash outlays, differences that can shift in magnitude and direction from year to year. At least one utility, the [City of Cincinnati, OH Water Enterprise](#) (Aaa stable), has [proactively amended its bond indenture](#) to reflect cash outlays for retirement benefits to avoid volatility in coverage measures.
- » **Debt service coverage based on reported expenses is a worse measure than cash-based coverage calculations.** Debt service coverage is intended to measure the magnitude by which an enterprise generates net revenues in excess of debt service in a given year. Relying on cash expense for pensions prevents debt service coverage from instead heavily reflecting accounting recognition of events such as changes in pension assumptions or investment performance.
- » **We measure balance sheet leverage and the strength of pension funding practices similarly across government and enterprise sectors.** We gauge the magnitude of pension risk in a consistent fashion across enterprise and government sectors, while acknowledging that pensions are a comparably less material credit issue for many enterprises. We measure balance sheet leverage from pensions using our adjusted net pension liability (ANPL), and assess the relative strength of contributions against our ["tread water" indicator](#).
- » **We will proactively use contributions for Other Post-Employment Benefits (OPEBs) to calculate debt service coverage.** Even though new OPEB accounting rules similar to pensions will not take effect until most issuers' fiscal year 2018 reporting, we will similarly rely on OPEB contributions rather than reported expenses in debt service coverage calculations.

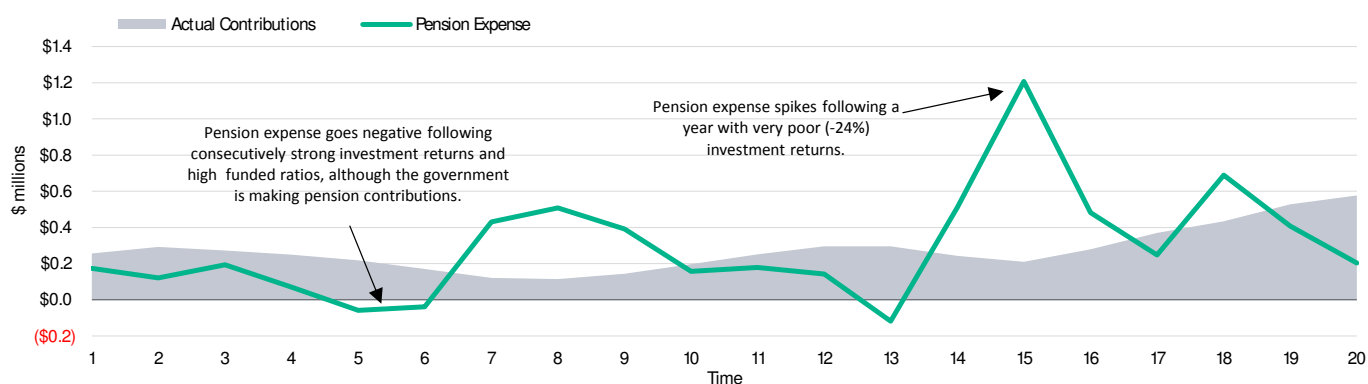
Reported pension expense can exhibit misleading annual volatility

New GASB 68 pension accounting standards can drive significant differences between reported pension expense on government income statements and actual cash contributions made pursuant to actuarial or statutory requirements. Compared to prior standards, the new accrual measure of pension expense is likely to exhibit greater volatility. GASB 68 took effect for financial reporting covering fiscal years ended June 2015 and later. At this point, most rated issuers impacted by GASB 68 reporting requirements have released at least one financial statement that reflects the new standards.

Government-wide balance sheets under new pension accounting for the first time include the net pension liability (NPL), which is the difference between accrued liabilities and the fair value of pension assets. "Pension expense" on the income statement tracks changes in the NPL from one year to the next, and these changes can be substantial in a given year, if for example, a government's pension plan(s) experience very strong or very weak investment performance. The accounting standards dampen this potential volatility through a variety of rules for spreading out the expense recognition of pension-related events over time. Even with these deferrals, however, pension expense can be substantially more volatile than the actuarial funding approaches used by governments to determine their annual contributions. For example, accounting expense may spike following steep market losses by pension funds, and may even be negative following a large investment gain, while the government continues to make cash contributions every year according to an annual required contribution, or "ARC"(see Exhibit 1).

Exhibit 1

Reported Pension Expense Under New Accounting Rules is Subject to Annual Volatility Moody's 20-Year Simulation of Government Contributions vs. Accounting Expense for a Hypothetical Pension Plan



Key assumptions include: 7.5% discount rate and assumed rate of return, 5-year asset smoothing, 30-year amortization as a level percentage of payroll

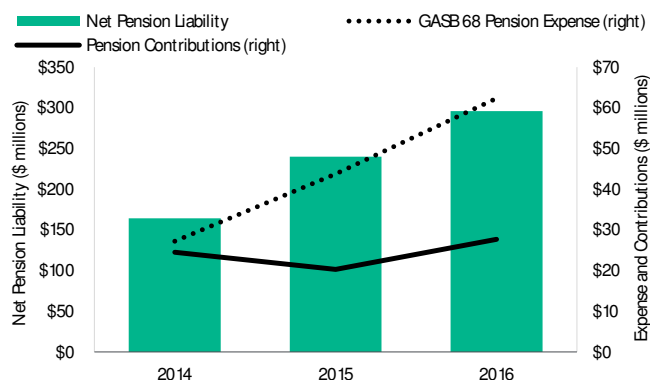
Source: Moody's Investors Service

Turning from simulated to actual examples, recent financial reporting by the [Philadelphia Gas Works](#) (PGW, Baa1 positive) demonstrates that a relatively insignificant difference between GASB 68 pension expense and pension contributions in one year may not hold in subsequent years. PGW's NPL increased to \$240 million in 2015 from \$164 million in 2014, due to changes in pension assumptions and weak investment performance. The utility's reported pension expense was quickly impacted, increasing to \$44 million from \$27 million. Meanwhile, its actuarially-based contribution declined to \$20 million from \$25 million, reflecting more prolonged recognition of actuarial experience due to asset smoothing and unfunded liability amortization. The gap between pension expense and contributions grew further in fiscal 2016 reporting, following an additional NPL increase (see Exhibit 2).

In contrast, pension expense for the power system of the [Los Angeles Department of Water and Power](#) (LA DWP, Aa2 stable) has continually fallen over the past several years as its reported NPL has dropped. The power system's GASB pension expense has not only consistently tracked below its contributions, but fell to a negative value in fiscal 2016 despite pension contributions amounting to roughly \$250 million (see Exhibit 3).

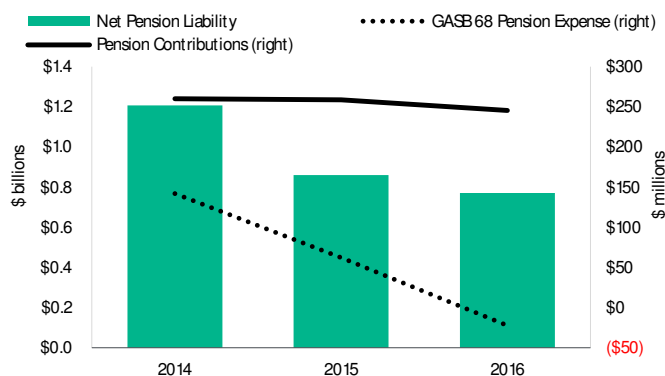
Demonstrating the disconnect between funding and accounting under GASB 68, contributions by both the PGW and LA DWP in fiscal 2016 exceeded our "tread water" indicator, meaning that under reported assumptions, contributions were expected to pay down a portion of the net pension liability.

Exhibit 2

PGW's Pension Expense Exceeds its Contributions by an Increasing Amount...

Source: Philadelphia Gas Works audited financial statements

Exhibit 3

...While the LA DWP Power System's Pension Expense is Falling Further Below Contributions, Even Reaching a Negative Value in Fiscal 2016

Source: Los Angeles Department of Water and Power, Power System Audited Financial Statements

At least one utility enterprise, the [City of Cincinnati, OH Water Enterprise](#) (Aaa stable), has [proactively amended its bond indenture](#) to clarify that its cash outlays for retirement benefits, not accrual expenses under GASB rules, will drive its debt service coverage calculations for measurement against covenants to bondholders.

Debt service coverage based on reported expenses is a worse measure than cash-based coverage calculations

Debt service coverage is intended to measure the magnitude by which the operations of an enterprise generate net revenues sufficient to cover debt service. Relying on reported pension expense may cause debt service coverage to instead heavily reflect factors such as changes in discount rate assumptions, benefit terms or very strong/weak investment performance. These factors no doubt can significantly drive changes in reported NPLs, and could even represent material credit events. However, they do not necessarily help to indicate the magnitude by which an enterprise did or did not generate net revenues sufficient to cover its debt service, the focus of the debt service coverage metric. In fact, accounting recognition rules surrounding these items can heavily skew that analysis if left unadjusted.

In 2014, the reported NPL for the [City of Chicago's](#) (Ba1 negative) Municipal Employee Annuity and Benefit Fund (MEABF) dropped, in part due to benefit reforms. Changes in benefit terms tend to impact pension plan outflows over the course of many years. GASB 68 requires the recognition of the present value of such changes on liabilities immediately in the year in which they occur. While the plan did not publish pension expense for the year-ended December 31, 2014, we have estimated it according to GASB rules using plan assumptions and reported changes in assets and liabilities. We find that pension expense associated with the MEABF plan would have been roughly negative \$1.2 billion for 2014, compared to \$150 million in total employer contributions.

In a dramatic swing in fiscal 2015, the MEABF's pension expense increased substantially for two reasons. First, the city's reforms were overturned, effectively reversing the liability reductions that occurred in the prior year. Second, the overturning of the reforms caused plan actuaries to project plan asset depletion, which in turn forced a steep discount rate drop under GASB rules. Governments typically set reported discount rates equal to their assumed rates of return on plan assets. However, if plans project asset depletion, then reported discount rates must reflect a blend of the assumed rate of return and a municipal bond index under GASB 67 and 68. The reported discount rate for the MEABF dropped to 3.73% in fiscal 2015 reporting, from 7.5% in the prior year under these rules. Roughly one-fifth of this assumption change was recognized in 2015 pension expense, further compounding the overall expense hike (see Exhibit 4).

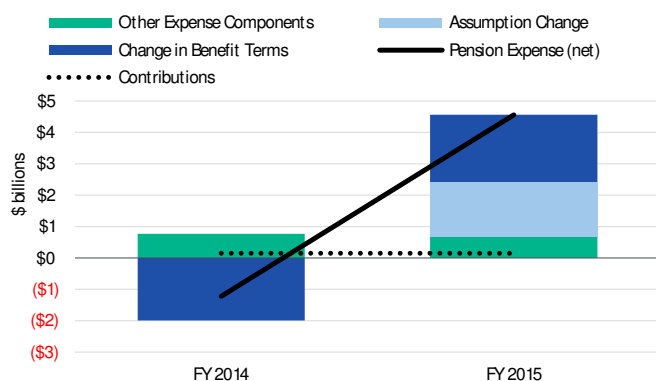
The [Chicago O'Hare Airport Enterprise](#) (A2 stable) participates in all four of Chicago's pension plans, the most significant of which is the MEABF. If left unadjusted, the non-cash pension expense elements would materially drive down debt service coverage. The airport's net

revenues produced debt service coverage of 1.03 times using cash pension contributions, compared to only 0.36 times coverage using reported GASB pension expense (see Exhibit 5).

Exhibit 4

GASB Pension Expense for Chicago's Municipal Pension Plan Heavily Influenced by Assumption Changes and Legally Overturned Reforms

Fiscal 2014 and 2015 pension expense for the plan in aggregate



Fiscal 2014 reflects Moody's estimate based on plan actuarial valuation

Source: *Municipal Employees' Annuity and Benefit Fund of Chicago actuarial valuation*

Exhibit 5

Heavy Presence of Non-Cash Items in Pension Expense Materially Impacted Debt Service Coverage in Chicago O'Hare Airport Enterprise's Fiscal 2015 Financial Reporting

\$000s	FYE 12/31/2015
Revenues	\$976,731
Operating Expenses	\$809,030
Net Revenues	\$167,701
Aggregate Debt Service	\$466,063
Preliminary Debt Service Coverage	.36x
GASB Pension Expense (Total, all plans)	\$339,546
Reported Pension Contributions - (Total, all plans)	\$25,800
Difference	(\$313,746)
Updated Operating Expenses	\$495,284
Updated Net Revenues	\$481,447
Updated Debt Service Coverage	1.03x

To solely demonstrate the impact of pension expense adjustments, these results exclude any additional changes related to OPEBs.

Source: *Moody's Investors Service, based on O'Hare Airport Enterprise CAFR*

Pension Measurement Lags Under GASB 68 Can Also Influence Debt Service Coverage

Under GASB 68 reporting, NPL balance sheet snapshots may be measured up to 12 months prior to a government's fiscal year end. For example, a government's balance sheet as of June 30, 2016 may reflect an NPL measured as far back as June 30, 2015. In such a case, debt service coverage based on reported pension expense would reflect an entirely separate 12-month period as it relates to pensions. In contrast, relying on cash contributions for pensions aligns directly with the fiscal year-end of the government enterprise, relating to the same period as other income statement elements.

We measure balance sheet leverage and the strength of pension funding practices similarly across government and enterprise sectors

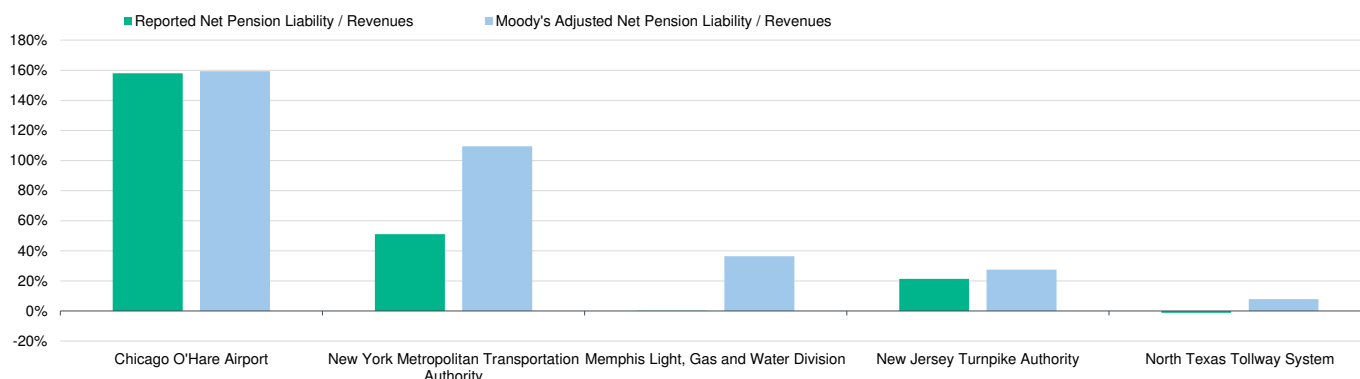
The impact to debt service coverage from using cash contributions for pensions over reported pension expense in many cases will be immaterial, simply because pension exposure may be relatively small compared to the operations of many enterprises. For example, contributions exceeded reported pension expense by 392% for the [San Francisco Airport Commission](#) (A1 stable), yet debt service coverage falls by only .06 times when using cash contributions over reported pension expenses. Even when seemingly immaterial, we will still rely on pension cash contributions for consistency and comparability, and because - as demonstrated earlier in this report - small differences can grow in significance from year to year.

Regardless of the relative level of credit significance in individual cases, we still measure the magnitude of pension exposure on governmental enterprise balance sheets in a manner consistent with our approach for state and local governments, using Moody's adjusted net pension liability (ANPL). Similar to pension expense, the relative significance of pension balance sheet burdens clearly varies across enterprises. Entities such as the Chicago O'Hare Airport Enterprise and the [Metropolitan Transportation Authority, NY](#) (A1 stable) have far greater balance sheet exposure to unfunded pension obligations under our adjustments than, for example, the [North Texas Tollway Authority, TX](#) (A1 stable, see Exhibit 6).

Exhibit 6

Pension Burdens on Government Enterprise Balance Sheets Ranges from Material to Very Small

Sample of fiscal 2015 governmental enterprise unfunded pension liabilities vs. operating revenues



Source: Government enterprise CAFRs and Moody's Investors Service

In cases where long-term pension obligations and/or costs are material to an enterprise, the magnitude of cash contributions relative to plan funding needs provides further analytical insight into financial results.

Because the absolute cash amount provides no indication of the contribution strength or weakness, we compare the contribution against our "tread water" indicator. Contributions below the "tread water" benchmark are not sufficient to cover all the interest on unfunded pension obligations, using reported assumptions, and vice-versa. Therefore, when contributions fall below the "tread water" level, NPLs are expected to grow in the event that all actuarial assumptions are met in a given year. Tracking contributions against the "tread water" benchmark can identify the extent to which operating results, and debt service coverage, may be based in part on weak pension contribution levels under reported pension assumptions, signaling higher costs in future years.

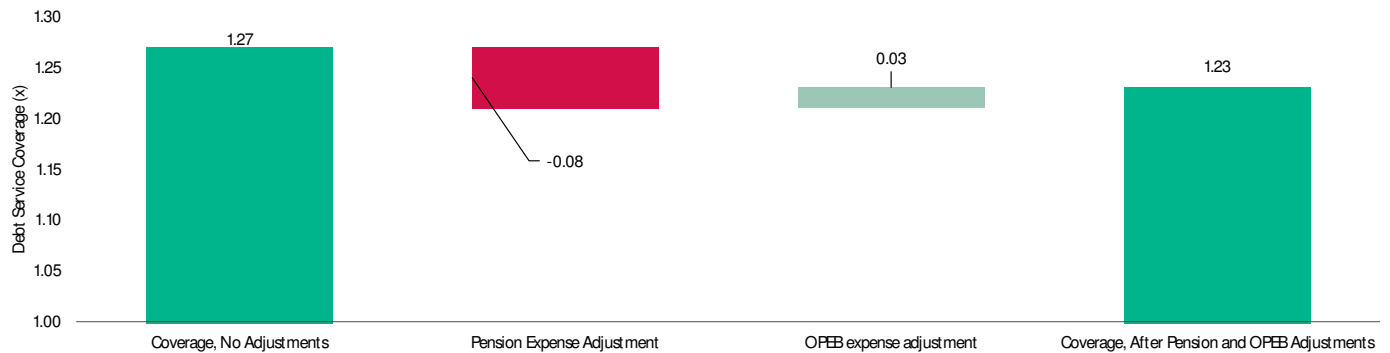
We will proactively use OPEB contributions to calculate debt service coverage

Currently, income statement expense for OPEBs is the "Annual OPEB Cost," directly reflecting the ARC pre-funding standard, plus imputed interest on prior ARC-underfunding and other technical adjustments where applicable. Many governments do not pre-fund OPEBs, instead choosing to fund them on a "pay as you go" basis. The common divergence between pay-as-you-go cash contributions and accounting expense renders OPEB contributions more useful for debt service coverage calculations. Further, the use of cash contributions will enable a consistent approach to debt service coverage calculations when OPEB reporting for government fiscal years ending June 2018 and later more closely aligns with the GASB 68 rules for pensions.

The impact to debt service coverage calculations from the use of cash contributions for OPEBs can either add to or mitigate the impact of the same adjustment for pensions. For example, debt service coverage for the San Francisco Airport Commission is pushed down by using pension contributions over pension expense, but is conversely pushed up when OPEB contributions are used over reported expense (see Exhibit 7).

Exhibit 7

Debt Service Coverage Adjustment to Reflect Pension and OPEB Contributions Rather Than Accrual Expenses Worked in Opposing Directions for the San Francisco Airport Commission in Fiscal 2016



Source: San Francisco Airport Commission CAFR, Moody's Investors Service

Given the generally greater amount of legal flexibility to change health benefits, our current analytical focus for OPEBs is primarily on budget burdens and strategies to contain costs. Nonetheless, large and growing unfunded OPEB liabilities, especially if combined with very limited legal flexibility to enact reforms, signal potential future cost pressure and thus remain an important credit consideration.

Appendix - Examples of Debt Service Coverage Results From Pension and OPEB Adjustments

Exhibit 8

Summary Financial and Retirement Obligation Data of Example Issuers (Page 1 of 2)

\$000s	Chicago O'Hare Airport	New Jersey Turnpike Authority	San Francisco Airport Commission	Memphis Light, Gas and Water Division	Philadelphia Gas Works
Sector	Airport	Toll Roads	Airport	Electric Utilities	Electric Utilities
Government Fiscal Year End	12/31/2015	12/31/2015	6/30/2016	12/31/2015	6/30/2016
GASB 68 Pension Measurement Date(s)	12/31/2015	6/30/2015	6/30/2015	12/31/2014	6/30/2016
Revenues	\$976,731	\$1,723,731	\$944,216	\$1,761,876	\$574,630
Expenses (net of depreciation)	\$809,030	\$569,828	\$411,789	\$1,471,595	\$471,509
Net Revenues	\$167,701	\$1,153,903	\$532,427	\$290,281	\$103,121
Debt Service	\$466,063	\$661,426	\$419,700	\$136,782	\$96,731
Preliminary Debt Service Coverage (x)	0.36	1.74	1.27	2.12	1.07
Pension Expense	\$339,546	\$27,077	\$6,691	\$16,325	\$62,336
Pension Contributions	\$25,800	\$16,660	\$32,953	\$21,378	\$27,680
Reconcile Pension Expense	(\$313,746)	(\$10,417)	\$26,262	\$5,053	(\$34,656)
% Increase or Decrease in Pension Costs	-92%	-38%	392%	31%	-56%
Annual OPEB Cost	\$0	\$100,182	\$19,913	\$38,176	\$40,980
OPEB Contribution	\$0	\$44,224	\$10,858	\$38,438	\$49,551
Reconcile Annual OPEB Cost	\$0	(\$55,958)	(\$9,055)	\$262	\$8,571
% Increase or Decrease in OPEB Costs	n/a	-56%	-45%	1%	21%
Adjusted Operating Expense	\$495,284	\$503,453	\$428,996	\$1,476,910	\$445,424
Adjusted Net Revenues	\$481,447	\$1,220,278	\$515,220	\$284,966	\$129,206
Final Debt Service Coverage (X)	1.03	1.84	1.23	2.08	1.34
Debt Outstanding	\$7,466,485	\$10,786,921	\$4,234,725	\$435,470	\$837,830
Reported Net Pension Liability (NPL)	\$1,542,137	\$366,300	\$144,271	\$3,610	\$296,093
Moody's Adjusted Net Pension Liability (ANPL)	\$1,555,363	\$468,881	\$741,470	\$640,039	\$689,437
Moody's "Tread Water" Indicator (Pensions)	\$66,109	\$45,533	Not yet available	\$23,551	\$23,147

Notes: Moody's "tread water" indicators for the New Jersey Turnpike and Chicago O'Hare Enterprise reflect GASB discount rates. Discount rates using actuarial funding assumptions are higher and would result in materially lower "tread water" indicators for these entities. Revenues for Memphis LGW include recognition of \$114 million for prepaid power costs reported on its fiscal 2014 balance sheet.

Source: Government comprehensive annual financial reports (CAFRs) and Moody's Investors Service

Exhibit 9

Summary Financial and Retirement Obligation Data of Example Issuers (Page 2 of 2)

Expenses (net of depreciation)	New York Metropolitan Transportation Authority	North Texas Tollway System	Clark County Water Reclamation District, NV	Los Angeles Department of Water & Power (LA DWP - Power Only)*	San Antonio Combined Utility Enterprise (CPS)
Sector	Mass Transit	Toll Roads	Sewer	Electric Utilities	Electric Utilities
Government Fiscal Year End	12/31/2015	12/31/2015	6/30/2016	6/30/2016	1/31/2016
GASB 68 Pension Measurement Date(s)	12/31/2014, 3/31/2015, 6/30/2015	12/31/2014	6/30/2015	6/30/2015	1/31/2015
Revenues	\$15,125,000	\$655,582	\$190,217	\$3,639	\$2,529,140
Expenses (net of depreciation)	\$12,895,000	\$173,277	\$75,526	\$2,637	\$1,743,962
Net Revenues	\$2,230,000	\$482,305	\$114,691	\$1,002	\$785,178
Debt Service	\$2,383,000	\$383,791	\$21,015	\$550	\$380,745
Preliminary Debt Service Coverage (x)	0.94	1.26	5.46	1.82	2.06
Pension Expense	\$860,033	\$2,816	\$5,343	(\$22)	\$37,386
Pension Contributions	\$1,288,593	\$3,305	\$7,164	\$245	\$46,000
Reconcile Pension Expense	\$428,560	\$489	\$1,821	\$268	\$8,614
% Increase or Decrease in Pension Costs	50%	17%	34%	n/a, negative expense	23%
Annual OPEB Cost	\$1,997,200	\$1,920	\$2,877	\$61	\$13,655
OPEB Contribution	\$503,400	\$56	\$621	\$73	\$27,975
Reconcile Annual OPEB Cost	(\$1,493,800)	(\$1,864)	(\$2,256)	\$12	\$14,320
% Increase or Decrease in OPEB Costs	-75%	-97%	-78%	19%	105%
Adjusted Operating Expense	\$11,829,760	\$171,902	\$75,091	\$2,916	\$1,766,896
Adjusted Net Revenues	\$3,295,240	\$483,680	\$115,126	\$723	\$762,244
Final Debt Service Coverage (x)	1.38	1.26	5.48	1.31	2.00
Debt Outstanding	\$37,138,000	\$7,840,320	\$478,125	\$8,943	\$6,030,528
Reported Net Pension Liability (NPL)	\$7,703,563	(\$7,807)	\$46,379	\$771	\$266,355
Moody's Adjusted Net Pension Liability (ANPL)	\$16,548,712	\$51,977	\$148,641	\$4,137	\$1,242,410
Moody's "Tread Water" Indicator (Pensions)	\$1,016,964	\$2,691	\$7,319	\$149	\$41,125

*Note: Data presentation for LA DWP (\$ in millions) reflects revenues, expenses and debt service associated with Moody's calculation of fixed charge coverage. LA DWP reports that 33% of its labor costs are allocated to plant (or CWIP), which would increase coverage if reflected in the figures above.

Source: Government comprehensive annual financial reports (CAFRs) and Moody's Investors Service

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- » [New Pension Accounting Increases Clarity of Plan Funding Trajectories, March 2015 \(1002636\)](#)

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REPORT NUMBER

1029357