

**CITY OF SAN DIEGO**  
**REPORT OF RATING CHANGES**

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**PUBLIC FACILITIES FINANCING AUTHORITY**  
**OF THE CITY OF SAN DIEGO, CALIFORNIA** (Base CUSIP: 79730A)

**\$453,775,000 Senior Sewer Revenue Bonds, Series 2009A** (Payable Solely from  
Installment Payments Secured by Wastewater System Net Revenues)

**\$634,940,000 Senior Sewer Revenue Refunding Bonds, Series 2009B** (Payable Solely  
from Installment Payments Secured by Wastewater System Net Revenues)

**\$313,620,000 Senior Sewer Revenue Refunding Bonds, Series 2015** (Payable Solely  
from Installment Payments Secured by Wastewater System Net Revenues)

**\$403,280,000 Senior Sewer Revenue Refunding Bonds, Series 2016A** (Payable Solely  
from Installment Payments Secured by Wastewater System Net Revenues)

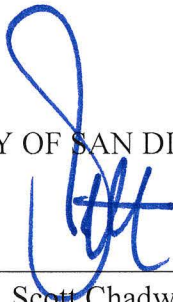
NOTICE IS HEREBY GIVEN that on August 3, 2016, Moody's Investor Service raised its rating on the City of San Diego's Senior Sewer Revenue Bonds to "Aa2" from "Aa3". The outlook on the rating was revised to stable from positive.

This is not a recommendation to buy, sell or hold any City indebtedness. Generally, a rating agency bases its ratings on the information and materials furnished to it and on investigations, studies and assumptions of its own. There is no assurance that such ratings will continue for any given period or that such ratings will not be revised downward or withdrawn entirely provided, if in the view of such rating agency, circumstances warrant. Any such downward revision or withdrawal of such ratings may have an adverse effect on the market price or marketability of the City's obligations identified above.

DATED: August 16, 2016

CITY OF SAN DIEGO

By: \_\_\_\_\_

  
Scott Chadwick  
Chief Operating Officer

Distribution: Electronic Municipal Market Access (EMMA)  
U.S. Bank, N.A.

## CREDIT OPINION

3 August 2016

### Update

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## City of San Diego (CA) Sewer Enterprise

Rating Update: Moody's Upgrades City of San Diego Sewer Enterprise (CA) Sewer Revenue Bonds to Aa2 from Aa3

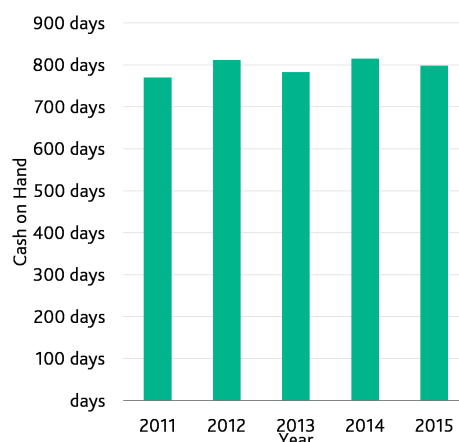
### Summary Rating Rationale

Moody's Investors Service has upgraded to Aa2 from Aa3 the rating on the City of San Diego Sewer Enterprise (CA) Sewer Revenue Bonds. The upgrade applies to approximately \$1 billion in outstanding senior lien obligations. The outlook has been revised to stable from positive.

The upgrade to Aa2 reflects the sewer enterprise's strong financial performance through the economic downturn as well as the successful completion of a long-term capital plan addressing environmental consent decrees going back to the early 2000's. The rating additionally reflects the inherent stability of the very large enterprise, which serves a dynamic and growing service area, constituting California's third largest metropolitan area, with above average socio-economic indicators. The enterprise is well positioned for its next phase of significant capital plans given the strength of management and our expectation that it will continue to meet or outperform financial projections over the long term. Also factored into the rating upgrade is the enterprise's exceptionally strong liquidity position, at close to 800 days of cash; a level that has remained consistently strong given the city's sound reserve policies. Lastly, improved credit quality incorporates initiation of the Pure Water Program, a recycled water project that is likely to support extension of the Modified Permit pertaining to the Point Loma Plant and to mitigate compliance upgrades that would cost approximately \$2.1 billion.

Exhibit 1

### Enterprise's Liquidity Remains Consistently Strong



Source: Moody's Investors Service

## Credit Strengths

- » Large, highly diverse service area with above average resident socio-economic indicators
- » Strong financial oversight with conservative budgeting and projections
- » Exceptionally strong liquidity levels with days' cash approaching 800 days

## Credit Challenges

- » Significant long-term capital plans that will fundamentally transform sewer and city water operations over the long term
- » Debt service coverage levels that are consistently thinner than the median for the current category
- » Continuing vulnerability in meeting environmental permitting and compliance requirements

## Rating Outlook

The stable rating outlook is based on Moody's expectation that the enterprise will maintain conservative financial operations with debt service coverage and liquidity levels consistent with projections. The stable outlook also incorporates our expectation that the city will successfully manage and complete its water reuse project.

## Factors that Could Lead to an Upgrade

- » Significant and sustained improvement in overall debt service coverage levels
- » Successful implementation of long-term capital plans and reduced uncertainty regarding environmental compliance

## Factors that Could Lead to a Downgrade

- » Material deterioration in debt service coverage levels
- » Sustained decline in unrestricted liquidity
- » Inability to execute current long-term capital plans while preserving strong financial and debt profile
- » Unanticipated challenges in obtaining regulatory approvals

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## Key Indicators

Exhibit 2

### San Diego (City of) CA Swr. Ent.

System Characteristics					
Asset Condition (Net Fixed Assets / Annual Depreciation)		43 years			
System Size - O&M (in \$000s)		195,334			
Service Area Wealth: MFI % of US median		120.45%			
Legal Provisions					
Rate Covenant (x)		1.20			
Debt Service Reserve Requirement		No DSRF			
Financial Strength					
	2011	2012	2013	2014	2015
Operating Revenue (\$000)	357,731	370,299	361,637	364,548	364,467
O&M (\$000)	198,571	194,534	195,637	201,951	195,334
Long-Term Debt (\$000)	1,259,790	1,207,651	1,106,406	1,089,506	1,031,297
Annual Debt Service Coverage w/o Demand Fees (x)	1.50	1.67	1.70	1.86	1.76
Cash on Hand	771 days	812 days	783 days	816 days	798 days
Debt to Operating Revenues (x)	3.5x	3.3x	3.1x	3.0x	2.8x

Source: City of San Diego and Moody's Investors Service

## Detailed Rating Considerations

### Service Area and System Characteristics: Serving State's Third Largest Metropolitan Area, Customer Base Demonstrates Continued Growth with Favorable Socioeconomic Levels

Serving a growing customer base of 274,000 customers residing in California's third largest metropolitan area, the enterprise derives great benefit and stability from the highly diversified regional economy with tourism, military, higher education, trade and biotechnology sectors playing important roles. The enterprise customer base benefits from the highly diversified metropolis with a very large 2.2 million total population base. The socio-economic profile for residents in the service area exceeds averages with per capita income at 119% of the nation and median family income at a high 120.5% of the nation. San Diego's Municipal System provides wastewater collection, treatment, and disposal services within the city limits. and the city provides transportation, treatment and disposal services to many of the surrounding communities who together comprise the Participating Agencies through the Metropolitan System (in combination the "department" or "enterprise"). The Regional Wastewater Disposal Agreement with the Participating Agencies extends through the end of 2050.

In FY 2015, domestic customers within the Municipal System accounted for 56% of total sewer service charge revenues, while commercial and industrial customers represented 26%. Sewer service charge revenues from Participating Agencies and the U.S. Navy account for the final 18%; a figure that has remain relatively consistent. There are no dominant customers within the municipal system; the largest is the U.S. Navy, which accounted for 3.42% of FY 2015 operating revenues, while the top ten customers account for 7.4% of revenues.

Over the past decade, the department has experienced a downward trend in wastewater flows, with total annual flows and average million gallons per day ("MGD") declining from a recent high in 2005. These declines reflect both the impacts of conservation requirements in response to the ongoing drought as well as lower inflow components resulting from below average rainfall over the past five years. Notably, the Department is projecting a 5% decline in per capita flow rates over the next ten years as a result of continuing conservation and the increased prevalence of higher efficiency toilets and appliances, and this conservatism is built into its multi-year cash flow projections. However, while per capita flow rates are expected to decline, overall wastewater flows are projected to increase slightly over the ten-year forecast period as a result of continued population growth. The municipal system accounts for

about two-thirds of the metropolitan system's total flows. Average daily flows from the Participating Agencies totaled approximately 50 MGD in Fiscal 2015, equaling roughly 57% of their total capacity rights.

#### Department Operations and Regulatory Compliance

San Diego's sewer enterprise provides collection, transportation, treatment, and disposal services through operations that include three wastewater treatment plants, two ocean outfalls, and a biosolids center. In common with other sewer utilities, especially those in coastal areas, the enterprise has struggled to comply with consent decrees and discharge permits under the Clean Water Act. However, in light of the Pure Water Project, discussed more fully below, the EPA has acknowledged the City's good faith effort to maximize beneficial reuse and reduce sewage treatment that does not meet the Act's secondary treatment standards. The enterprise's improved credit quality incorporates the city's significant progress in meeting these regulatory requirements.

As operator, the city holds two discharge permits: the first for the Point Loma Plant and the second for the South Bay Plant. Most significantly, because the Point Loma Plant provides only primary treatment, the city operates this plant subject to a Treatment Waiver from the EPA. Initially opened in 1963, the Point Loma Plant represents the primary treatment facility of the Metropolitan Sub-System, treating close to 91% of total wastewater flows. The effluent from the Point Loma Plant is discharged through a 4.5 mile long ocean outfall that delivers treated sewage effluent at a depth of 320 feet of water. As a result, it is one of a handful of large urban systems nationwide that is permitted to provide a lower treatment level than is required of almost all other treatment plants in the country ("advanced primary" treatment vs. "secondary"). It does so pursuant to a continued Modified Waiver. While the department is in full compliance with the Waiver, the Waiver expired on July 31, 2015, and the city has applied for an extension while it is administratively continued. City officials report that they hope to receive a decision by the end 2016, and following public hearings, have an extension that would become effective sometime in the summer of 2017.

Positively, the department's collection system has also worked to reduce the total number of sewer spills by 92%, from 365 in calendar 2000 to 35 in 2015. In 2014, the city completed all of its capital improvements required under its final consent decree, which had called for a total of 450 miles of pipeline replacement, increased sewer spill response and tracking, and increased root control. On August 4, 2015 the consent decree was terminated by all parties.

The permitted capacity of the treatment system totals 255 million gallons per day (MGD), 15 MGD from its South Bay Plant, which discharges secondary-treated effluent through an ocean outfall; 30 MGD from its North City Plant, excess effluent from which is transported to Point Loma Plant, and 240 MGD from its Point Loma Plant. In Fiscal 2015, the South Bay Plant and North City Plant were operating at 8 MGD and 16 MGD, respectively, falling short of targeted usage of the North City Plant of 22.5 MGD, due largely to constraints related to actual demand for recycled water.

We expect that the system will continue to face environmental and regulatory challenges. Most recently, for example, at the beginning of 2016, during a major El Nino storm event, a 15-inch sewer main ruptured, spilling an estimated 5.7 million gallons of sewage into Tecolote Creek and Mission Bay. As a result, the Department now faces a maximum fine of up to \$68 million. However, we believe that the city's tenured and experience staff will continue to successfully meet the operational hurdles common to large, multi-jurisdictional wastewater systems.

#### **Debt Service Coverage and Liquidity: Stable Coverage Levels and Exceptionally Strong Liquidity Enhanced by Sound Reserve Policies**

While debt service coverage ratios on senior lien and all debt are below medians for the improved rating category, the enterprise's overall financial picture remains extremely stable. Over the past decade, debt service coverage on senior lien obligations has averaged 1.78 times, with total debt service coverage averaging 1.60 times over the same period. While these figures fall slightly below a national median for Aa2 wastewater systems of 2.0 times, the Department's coverage figures have remained remarkably consistent since a multi-year rate increase was adopted in 2007, increasing rates by 8.75%, 8.75%, 7% and 7% in each subsequent year. Fiscal 2015 coverage figures remained in line with historical trends, with senior lien coverage of 1.73 times and a coverage figure for all obligations of 1.64 times. Management expects that Fiscal 2016 coverage levels will remain consistent with these trends, with coverage of senior and total debt obligations projected to equal 1.69 times and 1.60 times, respectively.

Projected senior lien debt service coverage for FY 2016 through 2020 declines slightly from historical performance, averaging 1.67 times, with average coverage for all obligations forecast at 1.58 times, although these coverage projections do not include debt service on an anticipated loan of \$43 million from the state revolving loan fund. Positively, however, the projections include conservative assumptions, including a slight reduction in operating revenues in FY 2016 related to water consumption declines stemming from state mandated water conservation, no rate increases, and O&M increases associated with personnel costs, supplies and contracts and energy and utilities. The overall water conservation efforts, which thus far have proved significant with the city water enterprise recording 25% declines in consumption, should have a relatively modest effect on sewer enterprise operations as sewer rates are based on winter month, indoor water usages, and water conservation efforts are particularly focused on outdoor irrigation. Officials report that the drought has increased chemical treatment costs associated with higher concentration levels. We note as well that the Department has historically outperformed its projections, reflecting again management's conservative budgeting practices and rigorous attention to rates, with a new cost-of-service study expected to be complete by the end of this year.

#### LIQUIDITY

The city sewer enterprise has maintained exceptionally strong liquidity levels resulting in its ability to fund capital improvements with cash on hand. In FY 2015, the city sewer enterprise's unrestricted cash position improved to close to \$433 million, approaching a robust 800 days cash on hand. Included in the liquidity position is an Operating Reserve of \$48 million and a Rate Stabilization Fund balance that increased to \$51 million in Fiscal 2015 following a deposit of \$29.7 million. Both of these funds could be used for operations or debt service. Favorably, we also note that in Fiscal 2010, the Department and Participating Agencies agreed to an Administrative Protocol requiring the Agencies to (1) fund a 45-day operating reserve and (2) make annual contributions toward the 1.20 rate maintenance requirement on the senior lien bonds. Liquidity levels are also enhanced by the city's adopted reserve policy, which targets an Emergency Operating Reserve equal to 70 days of operations, an Emergency Capital Reserve budgeted at \$5 million, and the Rate Stabilization Fund, with a targeted balance equal to 5% of the prior fiscal year's total operating revenue. Although projections reflect a decline in cash balances through 2018, they are expected to remain well above average and consistent with the rating category.

The improved rating reflects our expectations that the enterprise will continue to employ sound practices in maintaining its exceptionally strong cash position over the five year projection period, supported by stable net revenues with no anticipated draws upon the Rate Stabilization Fund. In addition to offsetting somewhat weaker coverage levels, the enterprise's strong liquidity position is expected to enhance its ability to provide cash for a significant portion of its future capital spending requirements.

#### Debt and Legal Covenants: Manageable Debt Burden, Combined with Declining Debt Service Payments Provides Capacity for Anticipated Pure Water Program Borrowing

The enterprise's debt position remains low and is expected to stay manageable through the projection period despite an anticipated \$159 million in additional borrowing and the planned initiation of the Pure Water Program; a \$3 billion recycled water initiative. The debt to operating revenue ratio for the enterprise was favorable at 2.83 times in FY 2015; consistent with the Aa rating level, and the enterprise's debt ratio also remains manageable at 29.5%, reflecting the substantial cash-funded component of the enterprise's capital spending. The five-year capital plan for the enterprise is estimated at \$574 million through FY 2020; a figure that has escalated somewhat over the prior year. The bulk of those needs are focused on pipeline replacement totaling \$281 million as it continues on the same pace of pipeline replacement of 45 miles annually.

The Pure Water Program represents the second largest capital spending component of the five-year CIP plan, with \$93 million in identified treatment plant upgrades at the North City Plant with an additional \$282 million in spending planned for Fiscal years 2021 and 2022 as expansion work is completed at the North City Plant and work begins on the Central Area component, which will constitute the largest proposed facility of the project, carrying all flows conveyed to the Point Loma Plant and producing 53 MGDs of purified water that will subsequently be transported to a reservoir where the water will be stored until final, potable treatment. Positively, despite the substantial size of the five-year CIP, the sewer enterprise expects to cash fund close to 57% of this program, utilizing \$82 million in capacity fees and \$324 million in cash from net revenues and accumulated cash. The remaining funding would come from state revolving fund loans at 16%; 11% from sewer revenue debt; and a small 1.4% expected to come from federal and state grants. While not all of the identified SRF loans and grants have been approved, we believe that the enterprise system could absorb additional borrowing at market rates at the current rating level should alternative sources of financing not materialize.



More generally, the city's Pure Water Program is an advanced water purification program intended to produce potable water sources from recycled water. Pure Water is a 20-year program expected to cost \$3 billion, of which \$1.8 billion would be funded by the sewer enterprise and the remaining \$1.2 billion would be funded from the San Diego Water Enterprise (Senior Revenue Bond rating Aa2/Stable). The pursuit of the Pure Water Program serves multiple purposes including the diversification of local sources of water supply as well as assisting the sewer enterprise in receiving Modified Permits for its Point Loma Plant. Implementation of Pure Water would decrease wastewater flows and pollutants processed by Point Loma Plant and improve discharge into the ocean. If the city is unable to secure a Modified Permit, implementation of secondary treatment would be required at the Point Loma Plant. The projected costs to bring the plant into compliance with the Clean Water Act would be approximately \$2.1 billion through 2050, with \$1.8 billion occurring by FY 2030. Operations and maintenance costs would also increase by approximately \$39 million annually once the plant was fully operational at the secondary treatment level.

#### DEBT STRUCTURE

The enterprise's outstanding debt is all fixed rate. Notably, principal amortization is rapid, with 65.7% of principal repaid within ten years. Overall debt service is also declining, dropping off sharply beginning in Fiscal 2026. The Department's favorable debt service structure provides capacity for the additional borrowing that will be required by the Pure Water Program; an additional factor supporting its improved credit quality.

#### DEBT-RELATED DERIVATIVES

The enterprise has not entered into any derivative agreements.

#### PENSIONS AND OPEB

The sewer enterprise participates in the city's pension and OPEB plans, and contributions are manageable. In Fiscal 2016, the sewer fund's \$15.7 million contribution to the city's core pension payment of \$255 million made up 6.2% of the city's total and roughly 7.2% of the enterprise's operations and maintenance; a figure that has escalated slightly over time. The sewer fund's budgeted Fiscal 2016 OPEB contribution of \$4.8 million constitutes 8.1% of the city's total expected contribution of \$59.2 million and makes up 2.2% of operations and maintenance. The city's total OPEB Unfunded Actuarial Liability equaled \$537 million in Fiscal 2015, or 615.8% of Covered Payroll.

#### Management and Governance

The wastewater enterprise is owned and operated by the City of San Diego. The enterprise's rates and charges are set by the City Council, although an Independent Rates Oversight Committee, whose 11 members are appointed by the Mayor, provides representation of every ratepayer class. Additionally, the Metro Joint Powers Authority, a coalition of municipalities and special districts sharing in the use of the city's wastewater facilities, also serves in an advisory capacity.

The city's passed its last multi-year rate increase in 2007, when a four-year rate increase was approved. Sewer rates were last increased on May 1, 2010 when they were increased 7%. The rate increases implemented in each consecutive year from 2007 were 8.75%, 8.75%, 7% and 7%. There have been no rate increases since 2010, and no rate increases are included in the enterprise's FY 2016-FY 2020 projections. The city expects its current cost-of-service study to be completed by the end of 2016, and we consider the city's rigorous attention to both sewer and combined water and sewer charges to be a source of credit strength.

Management consistently budgets conservatively and has on average produced debt service coverage ratios consistent with projections for senior lien as well as total debt.

#### Legal Security

The senior lien bonds are secured by a senior lien pledge of the net revenues of the system, and a rate covenant and additional bonds test ("ABT") of 1.2 times. Net revenues include any use of the Rate Stabilization Fund, to which the city deposited \$29.7 million in fiscal 2015, bringing the total balance to \$51 million. By adopted policy, the city established a baseline target for the Rate Stabilization Fund of 5% of the prior fiscal year's wastewater total operating revenues. Subordinate lien bonds have a 1.0x rate maintenance and ABT.

#### Use of Proceeds

N/A

## Obligor Profile

The waste water enterprise serves the City of San Diego (Municipal Sub System), and surrounding cities and communities (Metropolitan Sub System). The enterprise serves a highly diversified metropolis with a regional population base of 2.2 million. There are currently 274,000 customers. These figures compare favorably with a system that is sized to accommodate a regional population of 2.5 million.

## Methodology

The principal methodology used in this rating was US Municipal Utility Revenue Debt published in December 2014. Please see the Ratings Methodologies page on [www.moody.com](http://www.moody.com) for a copy of this methodology.



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MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

REPORT NUMBER 1033946

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