MOODY'S
INVESTORS SERVICE

CREDIT OPINION
15 July 2020

Rate this Research

Contacts

Eva Bogaty +1.415.274.1765
VP-Sr Credit Officer/Manager
eva.bogaty@moodys.com

Valentina Gomez +1.212.553.4861
AVP-Analyst
valentina.gomez@moodys.com

William Oh +1.415.274.1739
VP-Senior Analyst
william.oh@moodys.com

Sam Feldman-Crough +1.415.274.1706
AVP-Analyst
samuel.feldman@moodys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

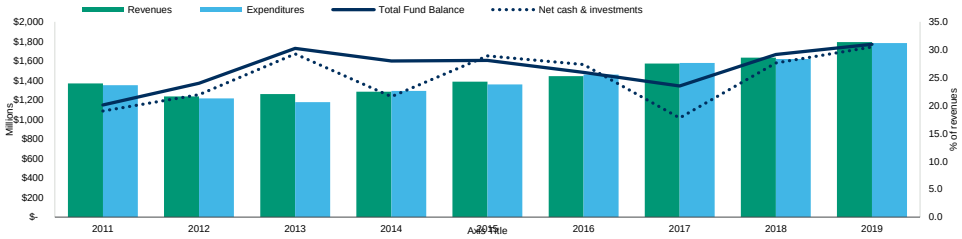
Honolulu (City & County of) HI

Update to credit analysis following assignment of negative outlook

Summary

The City and County of Honolulu (Aa1 negative) benefits from its massive tax base that has shown healthy long-term growth, as well as the strength and stability of the city and county's financial profile derived from that tax base. Although the coronavirus pandemic has severely curtailed the tourism activity that is a key driver of the economy, most of Honolulu's revenue is derived from property taxes rates that are incredibly low and reflective of assessments that are 18-24 months in arrears of real market activity, making it substantially less exposed and better positioned to respond to economic declines. Ample liquidity provides the city and county a substantial buffer to manage cash flows if the current economic dislocation from the coronavirus pandemic results in property tax delinquencies. As a result, Honolulu's financial profile will remain solid given a revenue structure that in the short-term is somewhat insulated from the immediate effects of the coronavirus on its tourism-supported economy. Large private and public construction projects and a significant military presence provide some offsetting stability to an economy that has been significantly slowed by the coronavirus, and the city has been the beneficiary of substantial federal aid. Debt is manageable, and the city and county has over the last several years adjusted its financial operations to respond to higher required contribution rates to address relatively high pension and OPEB liabilities.

Exhibit 1
Honolulu's finances show long-term structural balance, with solid reserve levels and liquidity



Source: City and County of Honolulu and Moody's Investors Service

Credit strengths

» Strong economic conditions that include a healthy and growing tourism industry, extremely low unemployment levels, and an expanding tax base

» Solid history of prudent fiscal management

» Commitment to and progress toward reducing pension and OPEB liabilities

Credit challenges

» High cost of living and vulnerability to shifts in the tourism sector

» Elevated and rising fixed cost burden from pensions, debt and retiree medical costs

» Uncertainty surrounding the timing of rail construction, final construction costs and size of future operating subsidy

Rating outlook

The negative outlook reflects our expectation that severe weakness in air travel will continue to suppress visitor counts to Honolulu, and weak economic conditions both in the US and globally will hurt tourism spending. Although these do not directly impact Honolulu's property tax revenue in the short-term, sustained levels of elevated unemployment will eventually hurt property valuations and property tax collections, and elevated fixed costs from debt, pension and OPEB liabilities will limit Honolulu's ability to make significant expenditure cuts. Shortfalls in general excise taxes and transient accommodations taxes in support of the rail project will remain manageable for the city and county relative to the size of its tax base and existing debt portfolio but add incremental contingent liability risks. Climate risks, particularly those related to sea level rise, are mid-to-long term challenges that state and local leaders are beginning to address.

Factors that could lead to an upgrade

» Increased economic diversification and improvement in wealth indices

» Significant improvement in the funding of OPEB and pension liabilities

» Greater certainty regarding rail costs, revenue streams and plans to address their impact on the city and county's finances

Factors that could lead to a downgrade

» Economic weakness leading to protracted declines in assessed values

» Material decline in the city and county's financial profile

» Inability to manage escalating fixed costs

» Substantial growth in the city and county's contribution to the rail project

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

Key indicators

Honolulu (City & County of) HI	2015	2016	2017	2018	2019
Economy/Tax Base					
Total Full Value ($000)	$174,335,551	$187,718,834	$199,626,577	$211,569,917	$226,641,985
Population	984,178	992,692	990,060	980,080	980,080
Full Value Per Capita	$177,138	$189,101	$201,631	$215,870	$231,248
Median Family Income (% of US Median)	130.8%	132.4%	131.8%	131.8%	131.8%
Finances					
Operating Revenue ($000)	$1,387,777	$1,444,691	$1,573,455	$1,632,658	$1,792,994
Fund Balance ($000)	$323,742	$315,640	$326,511	$447,548	$513,264
Cash Balance ($000)	$401,309	$395,140	$279,631	$450,959	$546,723
Fund Balance as a % of Revenues	23.3%	21.8%	20.8%	27.4%	28.6%
Cash Balance as a % of Revenues	28.9%	27.4%	17.8%	27.6%	30.5%
Debt/Pensions					
Net Direct Debt ($000)	$2,891,752	$2,749,028	$2,821,693	$3,294,326	$3,576,787
3-Year Average of Moody's ANPL ($000)	$2,447,229	$2,578,646	$3,383,118	$4,054,323	$4,651,088
Net Direct Debt / Full Value (%)	1.7%	1.5%	1.4%	1.6%	1.6%
Net Direct Debt / Operating Revenues (x)	2.1x	1.9x	1.8x	2.0x	2.0x
Moody's - adjusted Net Pension Liability (3-yr average) to Full Value (%)	1.4%	1.4%	1.7%	1.9%	2.1%
Moody's - adjusted Net Pension Liability (3-yr average) to Revenues (x)	1.8x	1.8x	2.2x	2.5x	2.6x

Source: City and County of Honolulu, HI, US Census Bureau, and Moody's Investors Service

Profile

Coterminous with the island of Oahu, the City and County of Honolulu is the capital city of the State of Hawaii (Aa1 negative) and the economic and political center of the state. Approximately one million people live on the island, constituting nearly 70% of the state's population.

Detailed credit considerations

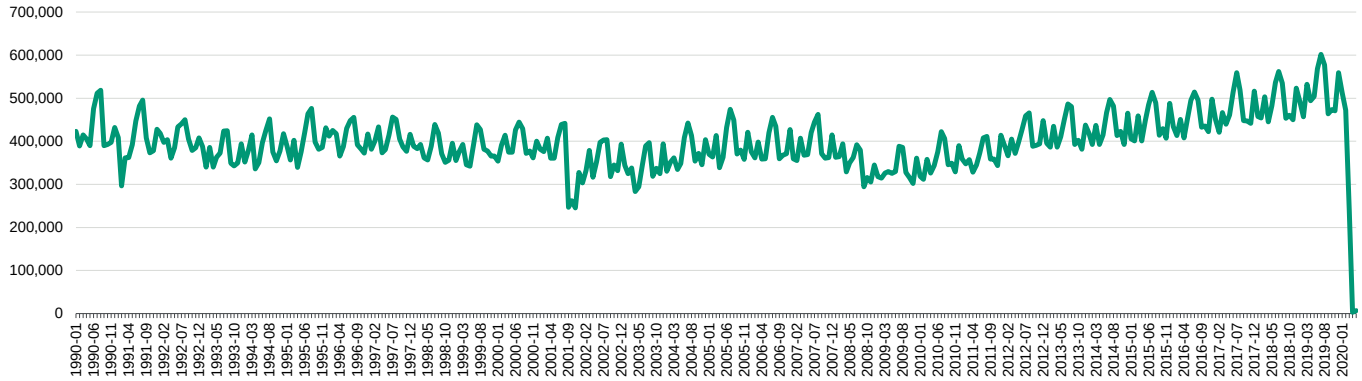
Economy and tax base: coronavirus shuts down tourism, sending unemployment to record levels, but tax base remains unaffected in the near term

Honolulu's economy and tax base have historically been key credit strengths, though the coronavirus pandemic has significantly and abruptly challenged that trend. Tourism, a primary economic driver, has effectively halted since mid-March with the statewide implementation of a mandatory 14-day quarantine and the closure in Honolulu of all non-essential businesses. Visitor counts are down dramatically, with visitor arrivals by air in May down 98.7% year over year, and the unemployment rate has reached 20%. The State of Hawaii (Aa1 negative) is planning to loosen its restrictions by allowing visitors who test negative for COVID-19 within three days prior to arrival to forgo the mandatory quarantine period, though how much this improves visitor numbers is uncertain.

Exhibit 3

Monthly air arrivals declined precipitously following the outbreak of the coronavirus pandemic

January 1990 - May 2020



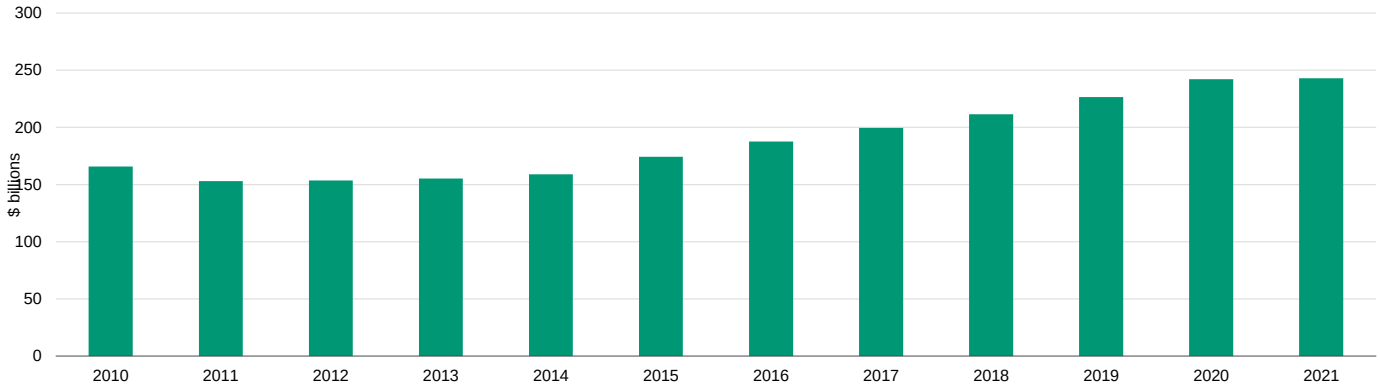
Source: State of Hawaii

Given the island's strategic location in the middle of the Pacific, military activity has been an important and stabilizing factor for the local economy for decades. The island serves as headquarters to US Indo-Pacific Command with large operational footprints at Joint Base Pearl Harbor-Hickam and Marine Corps Air Station Kaneohe Bay. Aside from the tourism and military sectors, Honolulu is also anchored by a significant public sector while health care, banking and agriculture add further diversity. Notably, substantial public and private construction projects have continued through the pandemic.

The city and county's assessed value is large and has shown robust growth over the last decade, driven by large residential and commercial development activity, particularly in the urban core. Given the massive spike in unemployment and our expectations for weakness in tourism activity, we expect property values to soften in the near term beyond trends we had been seeing prior to the pandemic. Between 2010 and 2020, assessed valuation (AV) increased by 46.1%, reaching $242.3 billion. Assessed values for 2021 are flat, with a 0.3% increase (to $242.9 billion) reflective primarily of growth in the commercial and industrial space. Honolulu historically has not experienced much foreclosure activity given the relative rarity of sub-prime financing in Hawaii. Despite several large hotel and commercial properties, no single taxpayer represents more than 0.89% of AV, and the ten largest taxpayers represent just 5.4% of 2020 AV.

Exhibit 4

Assessed value is moderating after a decade of strong growth and will soften with elevated unemployment



Source: City and County of Honolulu and Moody's Investors Service

Financial operations and reserves: solid financial position supported by property tax revenue, ample liquidity; substantial federal aid for coronavirus

The city and county's finances are a credit strength that should remain solid despite the devastating economic effects of the coronavirus pandemic. Honolulu's operating revenues are principally generated from property taxes (78.6% in 2019), followed by licenses and permits (12.7%). Because assessed values lag real market activity by 18-24 months, the city is able to project the bulk of its revenues with a high degree of accuracy. As an added credit strength, property taxes for operations (including debt repayment) are not restricted by rate or amount and are not subject to voter approval, giving the city and county considerable revenue raising flexibility. Despite some evidence that property values are softening, current market activity will not affect assessed values until fiscal 2022. The city and county did provide some property tax relief to residents by spreading out its upcoming tax payment (August 20) over four months. Given the extraordinarily high unemployment rate, we expect an increase in property tax delinquencies from historically low levels.

Honolulu's near-term financial health has been bolstered with federal aid to address the effects of the coronavirus. The city and county has received $519 million from the federal government, including $387 million under the CARES Act. This is equal to 31% of Honolulu's 2019 general fund revenue, and provides a substantial boost given the extremely stable property tax revenue base.

As a result of the stability in property tax revenue and additional federal aid, Honolulu's management team is expecting fiscal 2020 to be structurally balanced and has budgeted for a very modest surplus in fiscal 2021. The fiscal 2021 budget included a large cut to transportation expenses, which is mostly for the public bus system. The city and county is not expecting to receive its very modest share of transient accommodation tax revenue from the state in fiscal 2021.

On an operating funds basis (which Moody's defines here as including the general fund, debt service fund, and Highway Fund), Honolulu ended fiscal 2019 with available reserves of $513.3 million, equal to 28.6% of operating revenues, a level comparable to similarly rated peers of its size. This figure excludes a sizeable $553.1 million receivable in the form of an advance to the Honolulu Authority for Rail Transit in the General Obligation Bond Interest and Redemption Fund for previously issued bonds, less $45.6 million for the project bond reserve account. Available reserve levels as a percentage of revenues are slightly above the city and county's five year average of 24.4% and reflect a strong General Fund performance and the effects of financing activities.

Managers have consistently budgeted expenditures very conservatively adding to operating stability: in 2019 budgeted General Fund expenditures exceeded actual expenditures by $102.0 million, similar to the $96.1 million favorable variance in 2018. Operating expenses are principally for public safety (26.4%), followed by retirement and health benefits (22.7%), net transfers out (15.8%, primarily reflective of support for public transit and solid waste), and general government (10.1%). Operating expenses grew at a slightly slower pace (6.7% annually) than revenues between 2014 and 2019, and revenues exceeded expenses overall during this period by $23.8 million.

The city and county's direct support for the construction of rail built by the Honolulu Authority for Rapid Transportation (HART) appears manageable, as it will be limited to $214 million of the project's expected $9.1 billion costs (including financing). Notably, the project has faced significant delays and cost overruns; originally expected to be finished in 2019, completion of the rail system is currently expected by 2026. Project costs have also swelled from an initial estimate of $5.2 billion to $8.3 billion (excluding financing costs).

Through fiscal 2019, the city and county contributed $44 million, with an additional $25 million contribution in 2020. The bulk of the construction costs are expected to be provided from a 0.5% general excise tax (GET) surcharge, which expires in 2030. The GET surcharge is expected to provide just under $6.0 billion, with the remaining funding coming from federal grants ($1.6 billion) and a 1% state transient accommodation tax ($1.2 billion). HART officials are estimating a shortfall in GET and TAT of between $100 million and $450 million through 2030 because of the coronavirus pandemic. Because Honolulu finances a portion of the rail with GO bonds to be reimbursed by GET and TAT revenue, the projected revenue shortfall adds some additional credit risk, though relatively manageable compared to the size of the tax base and overall debt portfolio.

The federal government has delivered $806 million of the expected $1.6 billion in grant funding, though the remaining $744 million appears predicated on the receipt and acceptance of bids for the construction of the final 4.1 mile portion of the rail serving downtown Honolulu. To manage the construction of the final segment of the rail project, as well as the operations and maintenance of the system, HART and Honolulu have committed to using a public-private partnership model, though no bid has been accepted and the contract award process has been delayed several times. The question of how the critical city center portion of the project will be completed remains a significant unresolved credit risk.

Although the current size of the city and county's capital contributions are modest and manageable, significant uncertainty remains around the completion of the final portion of the rail. Additionally, the city and county is expecting to provide an annual operating subsidy of $87 million once full system operations begin in 2026 out of a total operating cost of $127 million, with operating costs additionally supported by a projected $40 million in farebox revenues. At this size, the annual operating subsidy would be a relatively manageable share of Honolulu's annual operating budget. However, the size of the subsidy will likely be determined by the ridership figures and pricing structure of the system, which remain uncertain. The city conservatively expects to subsidize most of the operating costs during interim operations.

Overall, we expect the city and county's finances will remain strong in the near-term but high fixed obligations will constrain cost-cutting measures. Additionally, possible capital and operational subsidies in the out years for the city's rail system add a dimension of modest risk. In fiscal 2019, debt service, pension and OPEB costs represented about 33.7% of operating revenues, which is high relative to cities and counties nationally and within the rating category. Going forward, Moody's will monitor annual revenue increases and the city's ability to absorb these costs. The city's commitment to maintaining budget balance and adequate reserve levels remains an important factor in Moody's credit evaluation of Honolulu.

LIQUIDITY

Despite a high dependence on property tax revenues, Honolulu has not engaged in short-term borrowing to manage its operating cash flow needs. At the end of fiscal 2019, the city and county held $546.7 million of cash and investments in its operating funds, or a strong 30.5% of revenue, while cash and investments citywide totaled more than $2.7 billion.

Debt and pensions: growing fixed costs expected to moderate as pension and OPEB reforms are fully implemented

The city and county has a very large debt portfolio in absolute terms but manageable relative to its tax base and operating revenues. With the issuance of the 2020 general obligation bonds, the city and county will have $4.5 billion in general obligation debt. Of this amount, $877.8 million is self-supporting or reimbursable, resulting in net direct debt of $3.6 billion. This is equal to just under 1.5% of full value and 1.9 times operating funds revenues, which is manageable. Honolulu benefits from the active role the state government plays in financing traditional municipal capital needs more typically funded at the local level throughout the rest of the country including education, health, and justice. Notably, the state constitution prohibits the state from levying a property tax.

DEBT STRUCTURE

The city and county's governmental (non-enterprise) debt structure is conservative, with a rapidly declining debt service schedule that reaches final maturity in 2046. The city and county and HART have a memorandum of understanding that requires HART to reimburse the city and county for debt service and costs associated with the issuances of GO bonds related to rail. The city and county has issued $776 million (net) in GO bonds for rail. As discussed above, GET and TAT weakness poses a modest but manageable additional credit risk for Honolulu because of this financing structure.

The district has a modest capital lease for LED streetlighting of $37.3 million with annual lease payments of just over $4.0 million annually through 2029.

DEBT-RELATED DERIVATIVES

The city has no derivative instruments in its GO borrowing program.

PENSIONS AND OPEB

Pensions and OPEB liabilities are significant credit challenges for Honolulu that are being actively addressed with increased contributions that have materially increase fixed costs recently but are expected to moderate substantially beginning in 2022.

Eligible employees of the city and county are participants in the State of Hawaii's Employees' Retirement System (ERS), a multiemployer cost-sharing defined benefit pension system. The city and county has an above average defined-benefit pension burden based on Moody's approach to evaluating pension liabilities. Reported unfunded liabilities in fiscal 2019 were approximately $2.4 billion. Net of shares allocated to business enterprises based on actual contributions from those entities, the three year average Moody's adjusted net pension liability (ANPL) for the city, under our methodology for adjusting reported pension data, is $4.8 billion through 2019, equal to a somewhat high 2.6 times operating revenues and 2.1% of full value.

In recent years the state legislature has enacted higher employer contribution rates to address the system's large unfunded liability, which grew significantly in 2016 with a lowering of the discount rate to 7.0% from 7.65%. The city and county's 2018 contribution was below the “tread water” indicator, resulting in a tread water gap equal to 4.0% of operating revenues. The tread water indicator measures the annual government contributions required to prevent reported net pension liabilities from growing, under reported assumptions.

Employer contributions have increased over the last several years, and will increase to 41% of payroll for police and fire and 24% for general employees in fiscal 2021 (July 1, 2020). The increased rates are projected to eliminate the unfunded actuarial accrued liabilities by 2045 and should significantly reduce the aforementioned “tread water” gap.

Additionally, the city's OPEB liability is sizeable. As of July 1, 2019, the reported unfunded OPEB liability was $1.90 billion. Positively, Honolulu began setting aside amounts to pre-fund its OPEB liability beginning in 2008, and the 2019 payment is equal to 100% of its annual OPEB ARC. City and county managers believe the cost increases associated with both pension and OPEB are manageable within the existing budget framework, with pension and OPEB contributions expected to increase by approximately 9.1% in 2020 and 7.9% in 2021, but moderating to 3-3.4% annual increases from 2022 through 2030.

Environmental, social, and governance considerations: strong management and institutional framework; city and county working to address climate risks, affordable housing

Environmental

Climate change is the primary environmental risk for Honolulu, with weather events and rising sea levels threatening major commercial, military, tourism, and residential properties across the island. In response, the city and county recently published the "Oahu Resilience Strategy," including a 44-point action plan to prepare for and mitigate the impacts of climate change.

Social

Honolulu faces similar social risks to other major Western US cities. The high cost of living, driven principally by the cost of housing but also by the cost of having to import nearly all consumer goods, is likely a key factor in Honolulu experiencing three (albeit small) consecutive years of population decline in 2017, 2018 and 2019. Honolulu has been identified as one of the least affordable housing markets in the nation, creating potential challenges to future economic expansion. According to data provided by the city and county, the median sales price of a single family home on Oahu is approximately $820,000. Positively, the city and county, along with the state, appear to be taking steps to support affordable housing development. How the city and county addresses affordability and its downstream effects will be an area of focus in our future credit reviews.

We regard the coronavirus pandemic as a social risk under our ESG framework, and the effect on Honolulu and the State of Hawaii have been significant. However, for Honolulu the credit risks emergent from the coronavirus are expected to be mitigated by a strong institutional framework and management team, healthy liquidity and substantial federal aid.

Governance

Governance for the city and county is strong, with historically strong management teams and practices. Honolulu is governed by an elected mayor and nine-member council and operates under a city charter. The state handles most activities typically performed by local governments, including education, health, and justice.

Hawaii counties have an institutional framework score of "Aa," or strong. Revenues are primarily derived from highly predictable property taxes, while state-distributed transient accommodations taxes represent a small fraction of resources. Counties have a high level of flexibility to raise property tax revenues annually, without limit. Expenditures primarily consist of personnel and an increasing level of pension and OPEB-related costs, which are highly predictable. Although counties can adjust personnel costs, elevated fixed costs and collective bargaining lead to low expenditure reduction ability.

As noted in the financial discussion above, the city and county's management team has delivered long-term structural balance, reflective of both the tools available to management as well as the decisions and actions undertaken by them.

Rating methodology and scorecard factors

The US Local Government General Obligation Debt methodology includes a scorecard, a tool providing a composite score of a local government's credit profile based on the weighted factors we consider most important, universal and measurable, as well as possible notching factors dependent on individual credit strengths and weaknesses. Its purpose is not to determine the final rating, but rather to provide a standard platform from which to analyze and compare local government credits.

Exhibit 5

Honolulu (City & County of) HI

Scorecard Factors and Subfactors	Measure	Score
Economy/Tax Base (30%) [1]		
Tax Base Size: Full Value (in 000s)	$242,938,240	Aaa
Full Value Per Capita	$249,279	Aaa
Median Family Income (% of US Median)	131.3%	Aa
Notching Factors:[2]		
Institutional Presence		Up
Regional Economic Center		Up
Economic Concentration		Down
Finances (30%)		
Fund Balance as a % of Revenues	28.6%	Aa
5-Year Dollar Change in Fund Balance as % of Revenues	11.4%	Aa
Cash Balance as a % of Revenues	30.5%	Aaa
5-Year Dollar Change in Cash Balance as % of Revenues	15.0%	Aa
Notching Factors:[2]		
Outsized Enterprise or Contingent Liabliity Risk		Down
Management (20%)		
Institutional Framework	Aa	Aa
Operating History: 5-Year Average of Operating Revenues / Operating Expenditures	1.0x	A
Notching Factors:[2]		
State Oversight or Support		Up
Debt and Pensions (20%)		
Net Direct Debt / Full Value (%)	1.5%	Aa
Net Direct Debt / Operating Revenues (x)	2.0x	A
3-Year Average of Moody's Adjusted Net Pension Liability / Full Value (%)	1.9%	Aa
3-Year Average of Moody's Adjusted Net Pension Liability / Operating Revenues (x)	2.6x	A
Notching Factors:[2]		
Unusual Risk Posed by Debt Structure		Down
Other		
Credit Event/Trend Not Yet Reflected in Existing Data Sets: climate change		Down
	Scorecard-Indicated Outcome	Aa2
	Assigned Rating	Aa1

[1] Economy measures are based on data from the most recent year available.
[2] Notching Factors are specifically defined in the US Local Government General Obligation Debt methodology.
[3] Standardized adjustments are outlined in the GO Methodology Scorecard Inputs publication.
Source: City and County of Honolulu, HI, US Census Bureau and Moody's Investors Service

© 2020 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND/OR ITS CREDIT RATINGS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S INVESTORS SERVICE DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S INVESTORS SERVICE CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from $1,000 to approximately $2,700,000. MCO and Moody's investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

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

REPORT NUMBER 1237393

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

MOODY'S
INVESTORS SERVICE