


TRANSPORTATION RESEARCH BOARD

Emerging Issues in Project Finance

Monday, November 18, 2019
1:00-2:30 PM ET



The Transportation Research Board has met the standards and requirements of the Registered Continuing Education Providers Program. Credit earned on completion of this program will be reported to RCEP. A certificate of completion will be issued to participants that have registered and attended the entire session. As such, it does not include content that may be deemed or construed to be an approval or endorsement by RCEP.



REGISTERED CONTINUING EDUCATION PROGRAM




Purpose


To offer various perspectives on emerging finance issues related to transportation projects.

Learning Objectives

At the end of this webinar, you will be able to:

- Discuss the perspectives of financiers of transportation projects, including USDOT, private equity, investment banking, and finance counsel
 - List factors considered by USDOT in extending financing to a major rail passenger station project
 - Describe the considerations of private equity concerning financing of transportation projects
 - Describe market pricing and policy issues associated with green bonds
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PDH Certificate Information

- This webinar is valued at 1.5 Professional Development Hours (PDH)
 - Instructions on retrieving your certificate will be found in your webinar reminder and follow-up emails
 - You must register and attend as an individual to receive a PDH certificate
 - Certificates of Completion will be issued only to individuals who register for and attend the entire webinar session – this includes Q&A
 - TRB will report your hours within one week
 - Questions? Contact Reggie Gillum at RGillum@nas.edu
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US DEPARTMENT OF TRANSPORTATION BUILD AMERICA BUREAU

CASE STUDY

\$526MM TIFIA LOAN

Moynihan Train Hall Redevelopment Project

November 18, 2019

Background

- Build America Bureau established in 2016 to consolidate US DOT's key finance programs
 - Transportation Infrastructure Finance and Innovation Act (TIFIA) credit program
 - Railroad Rehabilitation and Improvement Financing (RRIF) credit program
 - Private Activity Bonds (PAB's)
 - Infrastructure For Rebuilding America (INFRA) Grants
- Facilitates development of large, complex, multimodal projects
- TIFIA's strategic goal
 - To leverage limited Federal resources and stimulate investment in transportation infrastructure by providing low-interest, flexible credit assistance to projects of regional and national significance

Recent Trends and Observations

- More asset classes
- Different sources of repayment
- Unique and bespoke contractual and financial structures
- As market matures, project sponsors seek more aggressive credit structures
 - Need to maintain balance between our mission to provide flexible financing and facilitate construction of infrastructure with our responsibility to protect taxpayer investment

Project Description

The Moynihan Project will transform the James A. Farley Post Office building into a state-of-the-art transportation hub

- Sky-lit train hall similar in scale to Grand Central Terminal
- Platforms and support space for anchor railroad tenants (Amtrak, LIRR)
- Underground access to existing Penn Station and 8th Avenue Subway (A,C,E lines)
- \$526MM TIFIA loan, TIFIA eligible costs of approximately \$1.85B include only transportation elements



Project Description



Project Need

- New York's Penn Station is the busiest passenger transportation facility in the US with estimated volume of 700,000+ passengers per weekday
 - 30% of Amtrak's intercity rail traffic and 60% of North East Corridor trips go through Penn Station
 - Major Hub for New Jersey Transit and Long Island Rail Road
 - Operates above design capacity with aging infrastructure and limited access/egress to train platforms
- Passenger traffic is expected to increase as Midtown West business district and Hudson Yards expand



Existing Penn Entrance



New Penn Entrance

Project Location



Construction Plan – Two Components

Phase	Scope	Current Status	Completion Deadline	
Phase 1	\$315 million in platform level work to expand platform access, develop new entrances along 8 th Avenue and connect to existing Penn Station	Completed in 2017	NA	TRANSPORTATION ELEMENT <ul style="list-style-type: none">Train hall, TIFIA financed project
Phase 2	Construction of train hall	In progress	December 2020	
Phase 2	Development of approximately 150,000 sf of retail (core and shell)	In progress	June 2021	COMMERCIAL ELEMENT <ul style="list-style-type: none">TIFIA loan repayment based on office and retail build out by Developer
Phase 3	Development of approximately 600,000 sf office (core and shell)	In progress	TBD	

Key Project Parties

Public Sponsors

Empire State Development (ESD)

- Development arm of NY State
- Owner of the Farley Building*
- Borrower under the TIFIA Loan Agreement and manager of procurement

Amtrak

- Anchor rail tenant

MTA

- Anchor rail tenant

**ESD will lease the property for 99 years to the Private Developer who will sublease it to retail and commercial tenants*

Private Developer

Related Companies

- NYC based developer
- International portfolio of mixed-use, residential, retail and office properties

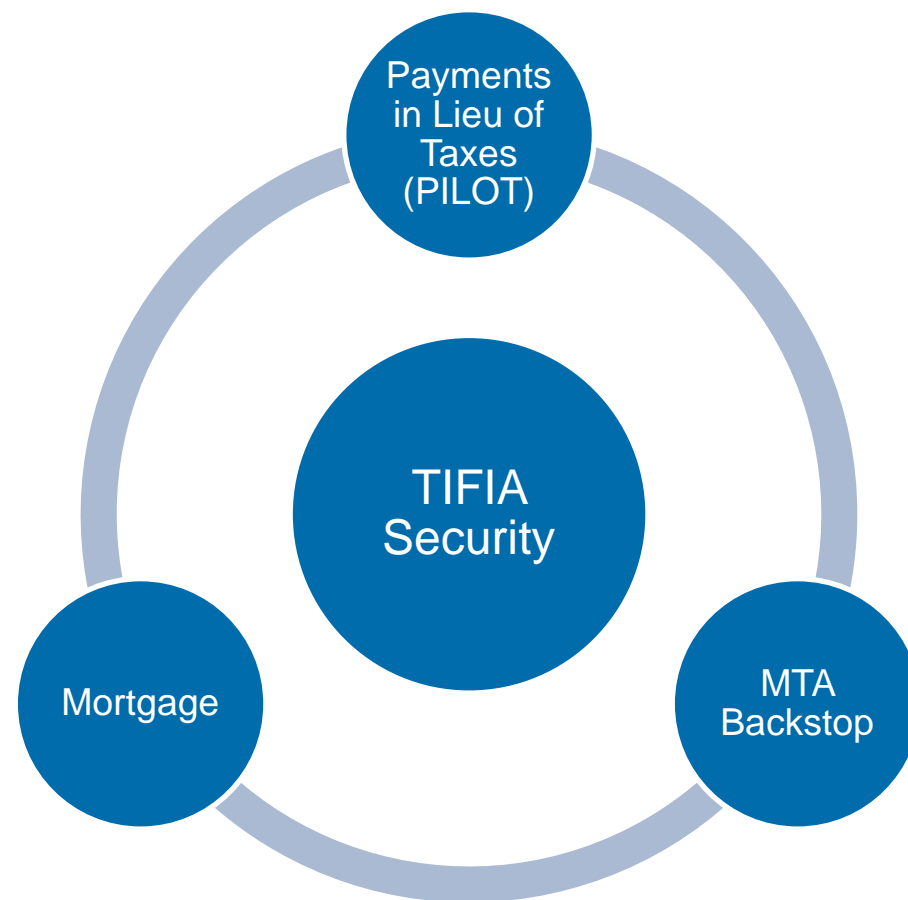
Vornado

- Fully integrated REIT, member of the S&P 500
- Major presence in Manhattan office market

Skanska

- Global civil engineering and building contractor
- Project Contractor

TIFIA Security

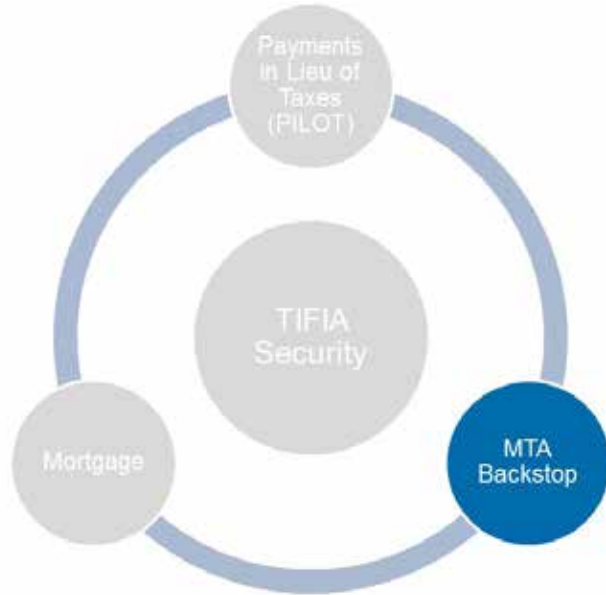


TIFIA Security: PILOT



- Developer leases commercial and retail spaces for 99 years and pays PILOT to ESD in amounts that approximate real estate taxes
- ESD pledges PILOT payments to TIFIA
- PILOT amounts are predetermined and fixed for the first 14 years
- After year 14, PILOT will be calculated annually as per the methodology prescribed by NYC Department of Finance
- PILOTs are based on assessed value which is calculated based on net operating income and assessed value of peer properties

TIFIA Security: MTA Backstop



- MTA will backstop TIFIA debt service
- Backstop can only be released if the project has met a series of release tests which would evidence real estate stabilization (e.g. occupancy, debt service coverage and/or ratings)

TIFIA Security: Mortgage



- Assignment of leases and a mortgage over ESD's fee simple title to the property
- Allows DOT to foreclose on the property following a default under the loan agreement and acceleration of the TIFIA Loan

The Challenges

- No real peer group/precedent transactions
- Non-traditional source of repayment
- Reliance on real estate market and on future valuation of asset that is not yet constructed
- Lack of contractual privity with Developer
- Customary for NYC property owners to appeal real estate assessments

The Strengths

- Prime location
- Experienced Developer and Contractor
- MTA Backstop in place until real estate stabilizes
- Reduced construction risks since the majority of subgrade work is complete and the superstructure is in place
- No other Project debt
- True up mechanics including cash sweeps and mandatory prepayments if debt service coverage declines beyond certain thresholds, appeals reserve
- Strong security package including mortgage over ESD's fee title to the property
- Low loan to completed value ratio

TRB Presentation

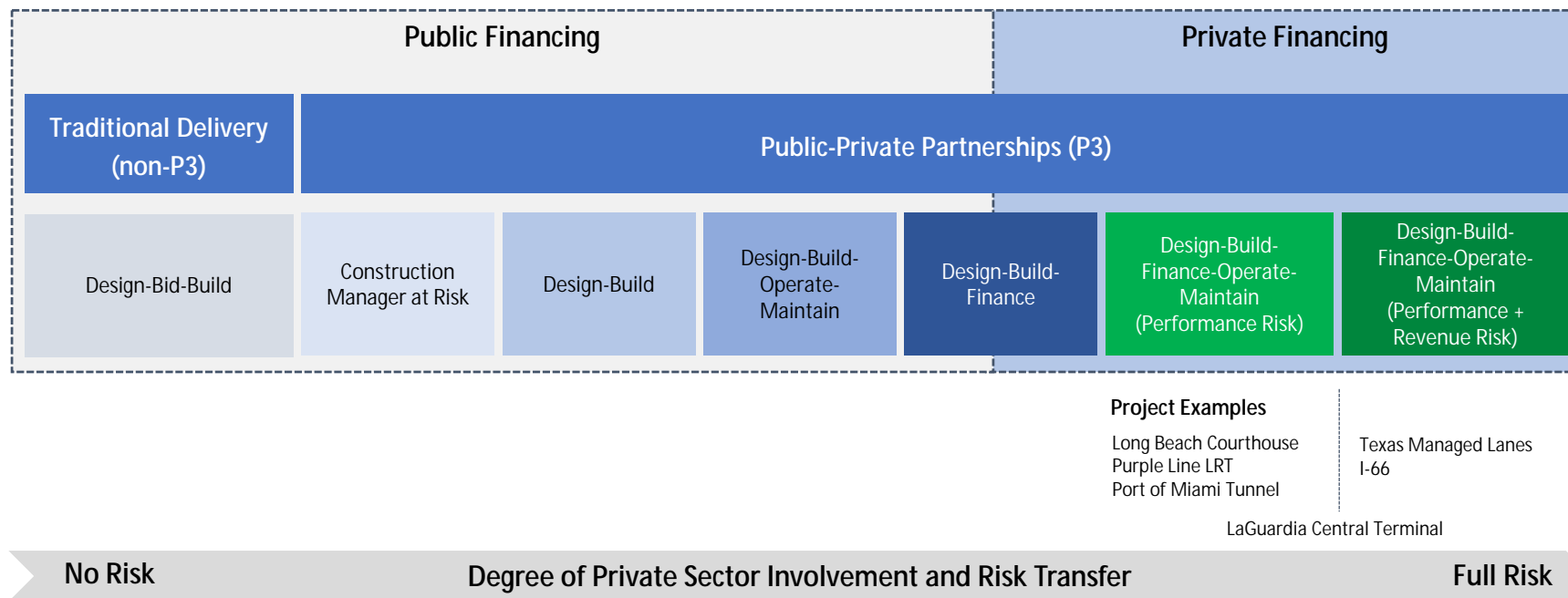
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Agenda

- I. P3 Background
- II. Major Trends
- III. Project Examples

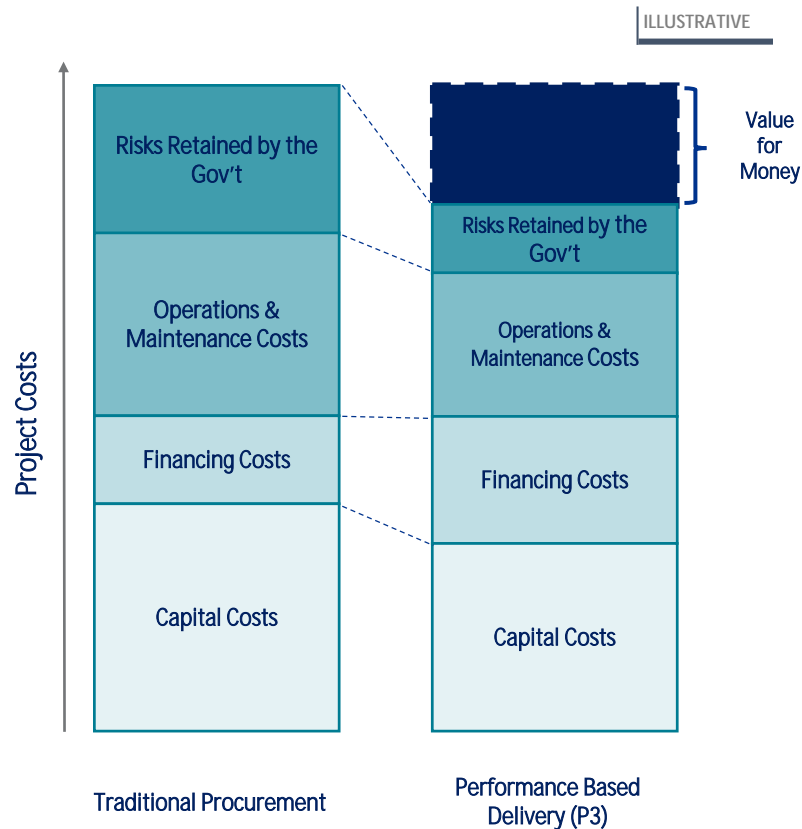
Greenfield Project Delivery Models

There is a broad range of delivery options for projects



Traditional Procurement vs. P3

VALUE FOR MONEY ANALYSIS



KEY HIGHLIGHTS

A P3 procurement ensures:

- Risk transfer of not only design and construction but long-term operations and maintenance
- Long-term budget certainty
- Competitive tension which drives down costs
- Private sector innovation which drives down costs

P3 Project Risk Allocation

Project Phase	Key Risks	Risk Allocation	
		Public Authority	Private Sector
Design & Construction	Construction cost and time overrun		<input checked="" type="checkbox"/>
	Design & Construction Approvals and Permits	<input checked="" type="checkbox"/>	
	Latent Defects		<input checked="" type="checkbox"/>
Operations & Maintenance	Labor and material availability		<input checked="" type="checkbox"/>
	Maintenance costs higher than anticipated		<input checked="" type="checkbox"/>
	Meeting Performance Requirements		<input checked="" type="checkbox"/>
Project Financing	Revenue Risk	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Refinancing risk		<input checked="" type="checkbox"/>

Sector Review - Roads

The road sector in the North American market is fairly mature

Key Themes	Sector Highlights	
§ Multiple road P3s have transacted in the US with the majority procured as revenue risk projects	72%	Americans facing daily highway congestion and support tolls
§ Few major opportunities focused on at DOT level including large scale managed lanes programs	\$836bn	Total Backlog of US Roadway capital
	D	ASCE Infrastructure Report Card Score for US Roads

Representative Projects		
Meridiam Projects	Other Projects	Pipeline
<ul style="list-style-type: none">• LBJ Express Lanes (Texas)• North Tarrant Express (Texas)• Presidio Parkway (California)• I-66 (Virginia)• Central 70 (Colorado)• SW Calgary Ring Road (Canada)• NE Anthony Henday Drive (Canada)	<ul style="list-style-type: none">• I-4 Ultimate (Florida)• I-77 HOT Lanes (North Carolina)• 395 Express Lanes (Virginia)• 95 Express Lanes (Virginia)• 495 Express Lanes (Virginia)• SH-130 (Texas)• SH-288 (Texas)• I-75 (Michigan)	<ul style="list-style-type: none">• GDOT Major Mobility Investment Program (Georgia)<ul style="list-style-type: none">• SR 400 Express Lanes• I-285 Express Lanes• I-270 / 495 Managed Lanes (Maryland)

Sector Review - Transit

Mass transit is increasingly important in cities around the US, with many transportation agencies now incorporating transit requirements into planning

Key Themes		Sector Highlights
§ Public transit ridership growth is outpacing population growth	69%	Of transit-oriented ballot initiatives approved in 2016
§ Limited federal transit funding has pushed state transportation agencies to explore alternative delivery models	\$90bn	Transit system maintenance backlog
§ Construction complexity, operational performance requirements and maintenance demands lends transit projects to DBFOM model	45%	Of transit operating expenses are paid through fare box revenues

Representative Projects		
Financial Close	Under Procurement	Pipeline
<ul style="list-style-type: none">• Purple Line LRT (MINA asset)• Waterloo LRT (MINA asset)• Hurontario LRT• Ottawa LRT• Eglinton Crosstown LRT• Denver FasTracks Eagle P3	<ul style="list-style-type: none">• Honolulu LRT Project• Sepulveda Pass Corridor	<ul style="list-style-type: none">• West Santa Ana LRT• East San Fernando Valley LRT• MTA CBTC Signalling Project• Electrification of Transit Infrastructure

Long Beach Courthouse | Long Beach, California

Grantor: Administrative Offices of the Courts



PROJECT HIGHLIGHTS

First performance-based social infrastructure P3 project to reach financial close in the United States (December 2010)

Project includes the DBFOM of a new civil and criminal courthouse over a 35 year concession term.

Full availability payment.

Project originally funded by a bank loan and equity

In 2013, refinancing of bank debt through issuance of a long-term fixed price private placement bond

KEY RISKS MITIGATED

- ü *Project delivered ahead of schedule and under budget (no change orders)*
- ü *Additional refinance risk mitigated by long-term private placement solution*
- ü *Courthouse has had 100% availability during Operations period*

LBJ Express Project | Dallas, Texas

Grantor: Texas Department of Transportation (TxDOT)



PROJECT HIGHLIGHTS

Largest DBFOM project in TxDOT's history. Regionally significant project with the goal to relieve severe urban congestion in Dallas

The \$2.6B Project includes the DBFOM of new managed lanes and the reconstruction of general purpose lanes and bridges over a long-term (52 year) concession

Full traffic risk.

Project is funded by the following sources:

- TIFIA Loan
- Tax-Exempt Private Activity Bonds (PABs)
- Construction-period Toll Revenues
- Equity Funds
- Contribution from TxDOT

KEY RISKS MITIGATED

- ü Revenue risk from user tolls on managed lanes transferred to private sector
- ü PABs and TIFIA provided cost efficient long-term financing option with no refinance risk
- ü Capacity of vital highway corridor in Dallas has been nearly doubled

La Guardia Airport Central Terminal| New York, NY

Grantor: PANYNJ



PROJECT HIGHLIGHTS

The Project includes the DBFOM of the LaGuardia Central Terminal B (CTB) in New York City, as well as the O&M for the existing Terminal B

Payment Mechanism:

- § Availability Based: Aeronautical revenues are composed of airline terminal rentals, fees, and charges paid by airline tenants
- § Demand Risk: Non-aeronautical revenues earned from food and beverage and retail concessions as well as advertising and telecom

Project is funded by the following sources:

- Private Activity Bonds
- PANYNJ Funds
- Project Equity

KEY RISKS MITIGATED

- ü *Operations and Maintenance of Existing Terminal during construction*
- ü *Contracted cash flow from long-term gate fees (with revenue share to PANYNJ)*
- ü *Energy efficient with new chilled heating and refrigeration plant*

Central 70 Project | Denver, Colorado

Grantor: Colorado Department of Transportation (CDOT)



PROJECT HIGHLIGHTS

Project comprises the DBFOM to upgrade 10-miles of interstate highway in Denver to accommodate managed lanes and improve urban integration

Payment mechanism for the Project includes annual performance-based availability payments from CDOT over a 35 year concession

Availability payment (with CDOT backstop)

Project is funded by the following sources:

- TIFIA Loan
- Tax-Exempt Private Activity Bonds (PABs)
- Equity Funds
- Public Subsidy from CDOT
- Innovative construction curve management

KEY RISKS MITIGATED

- ü *PABs and TIFIA provided cost efficient long-term financing option with no refinance risk*
- ü *Availability-based payment mechanism incentivizes long-term performance of the asset*
- ü *P3 procurement supported private sector innovation to provide urban integration solution*

Green Bond Issuance Update

2019 Transportation Research Board
Webinar

November 18, 2019

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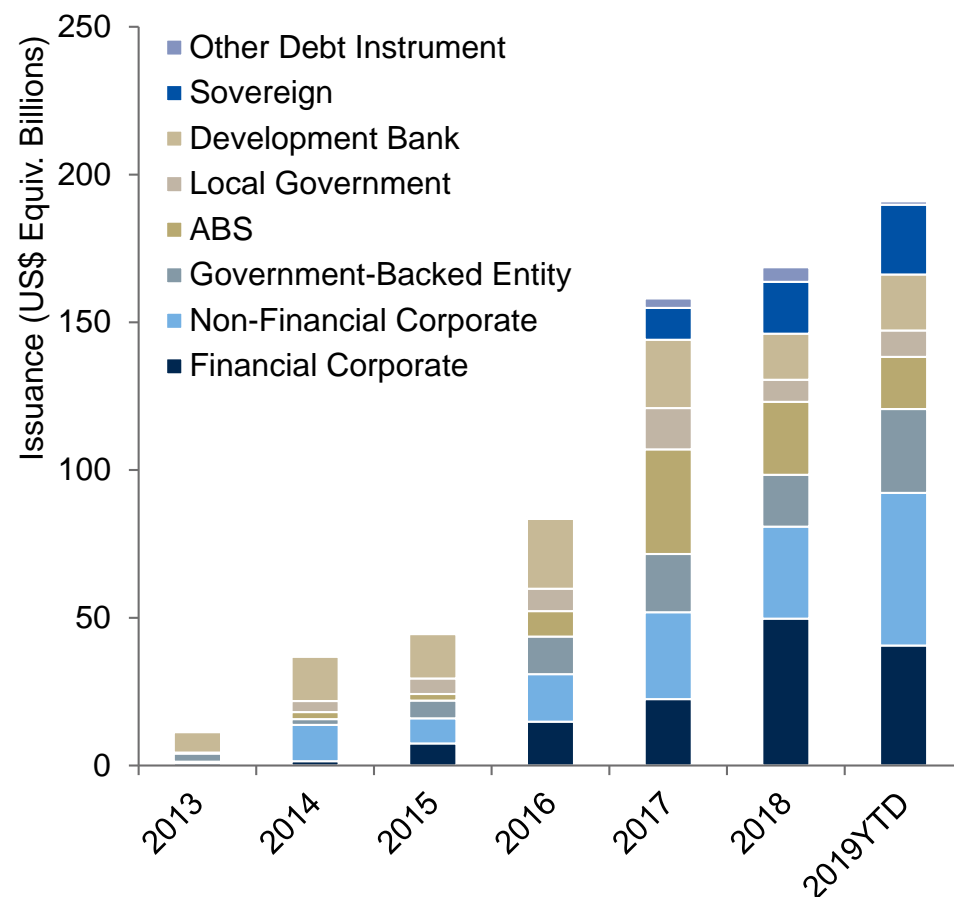
Green Bond Principles (GBP) Typically Govern Project Eligibility

Summary of Green Bond Principles

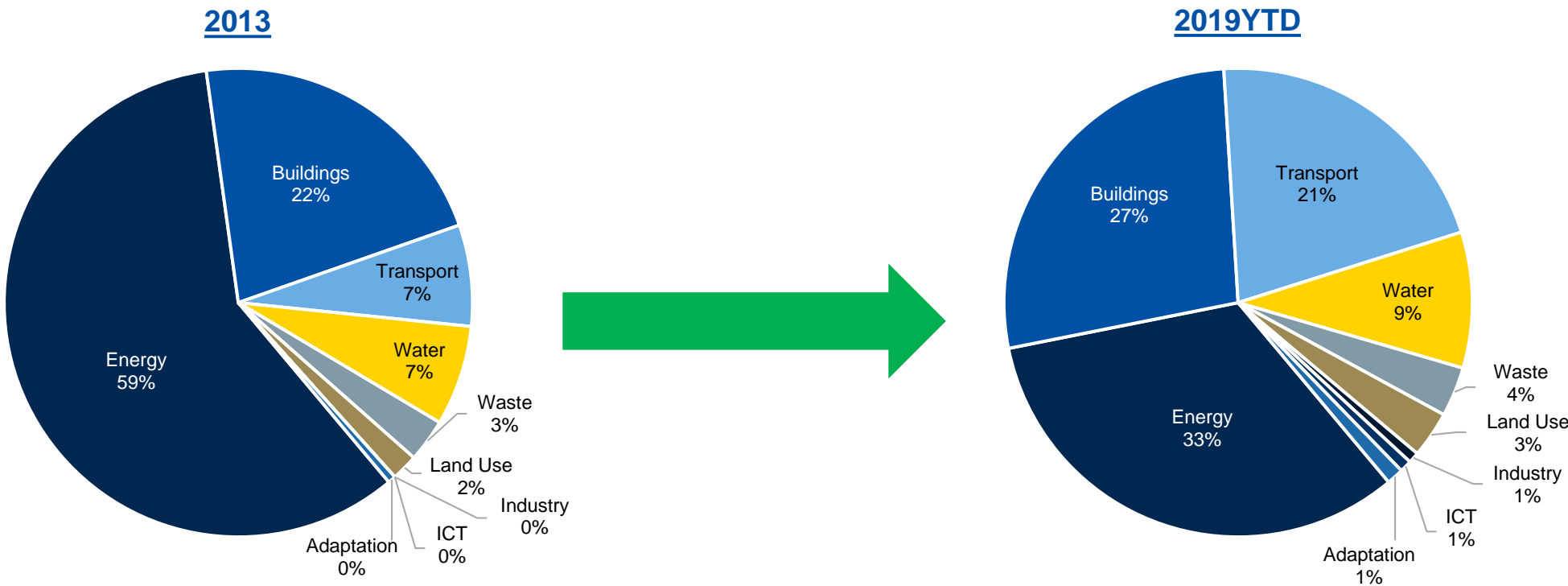
- § In June 2018, the International Capital Market Association released updated Green Bonds Principles
- § The Green Bonds Principles are voluntary guidelines that provide issuers and investors a framework for evaluating and issuing Green Bonds
 - Use of Proceeds
 - Process for Project Evaluation and Selection
 - Management of Proceeds
 - Reporting
- § Eligible Project categories contributing to five high level environmental objectives (Climate change mitigation, climate change adaptation, natural resource conservation, biodiversity conservation, and pollution prevention and control):
 - Renewable Energy
 - Energy efficiency (including efficient buildings)
 - Pollution prevention and control
 - Environmental sustainable management of living resources
 - Territorial and Aquatic Biodiversity
 - Clean transportation
 - Sustainable water management (including clean and/or drinking water)
 - Climate change adaptation
 - Eco-efficient technologies and processes
 - Green buildings which meet recognized standards

State of the Green Bond Market: Global Green Bond Issuance Remains Robust

- § The global Green Bond market expanded from \$11 billion in all of 2013 to over \$190 billion in 2019YTD
- § Global cumulative issuance has now passed \$500 billion
- § US, France and China account for 44% of 2019YTD Green Bond issuance
 - USA, China and France are top three countries for labelled green bond issuance, followed by Germany, Netherlands, Sweden, Spain, Japan, Italy and Canada
 - Notable growth observed in Canada, Mexico, Japan and Brazil
- § Top sectors for green bond issuance since 2013 are:
 - Energy: \$252bn
 - Buildings: \$180bn
 - Transportation: \$119bn
 - Water: \$78bn
- § Many of the corporate issuers that have come to market to-date tend to be companies that are funding renewables projects



State of the Green Bond Market: Use of Proceeds Evolution



Transportation Green Bond issuance market share has seen the most significant growth

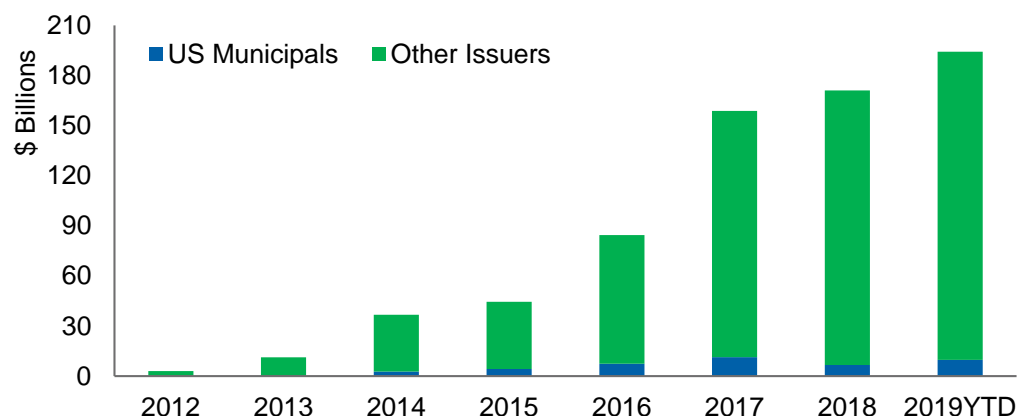
Source: Climate Bond Initiative

US Municipals Continue to Participate in the Green Bond Market

US Municipal Green Bonds Market Shows Strong Growth

- § \$9.8 billion US Municipal Green Bond issuance 2019YTD, representing 5.04% of the global market, but only 2.86% of the municipal market
- § Since 2014, the water/sewer sector has been the most active participant in the US municipal green bond market, having issued \$15.2 billion of green bonds
- § In the last two years, other sectors that have issued at least \$1 billion of Green Bonds are Transportation, Housing, Health Care, General Purpose financings
- § Issuers continue to utilize the Green Bond Principles as a guiding document but use discretion in obtaining second opinions, third party verification, and disclosure

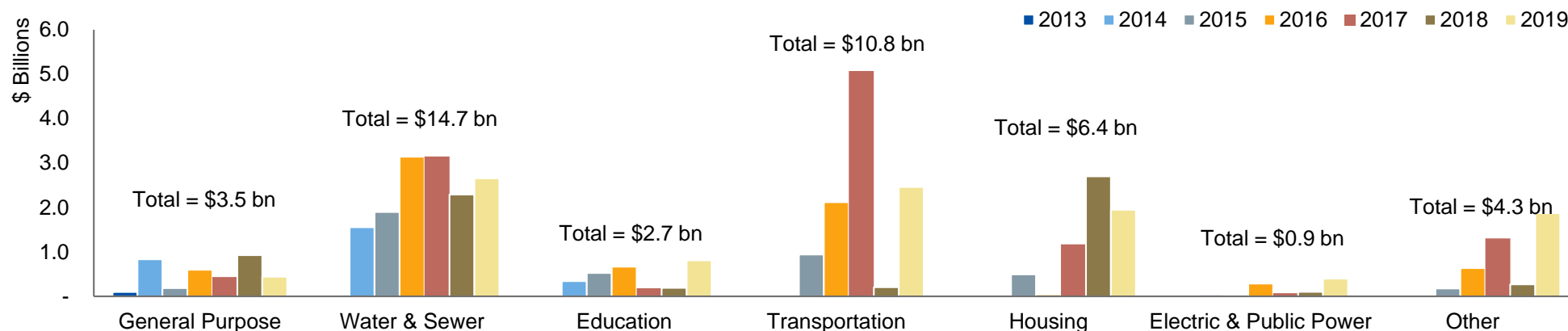
Annual Global Green Bond Issuance (\$ billions)



Annual US Municipal Green Bond Issuance Breakdown (\$ millions)

	2012	2013	2014	2015	2016	2017	2018	2019YTD
\$ Municipals	-	100.0	2,775.7	4,261.4	7,500.5	11,382.1	6,691.8	9,802.3
Muni % of Total	-	0.9%	7.6%	10.1%	9.3%	7.1%	4.2%	5.0%

US Municipal Green Bond Issuance (by type)



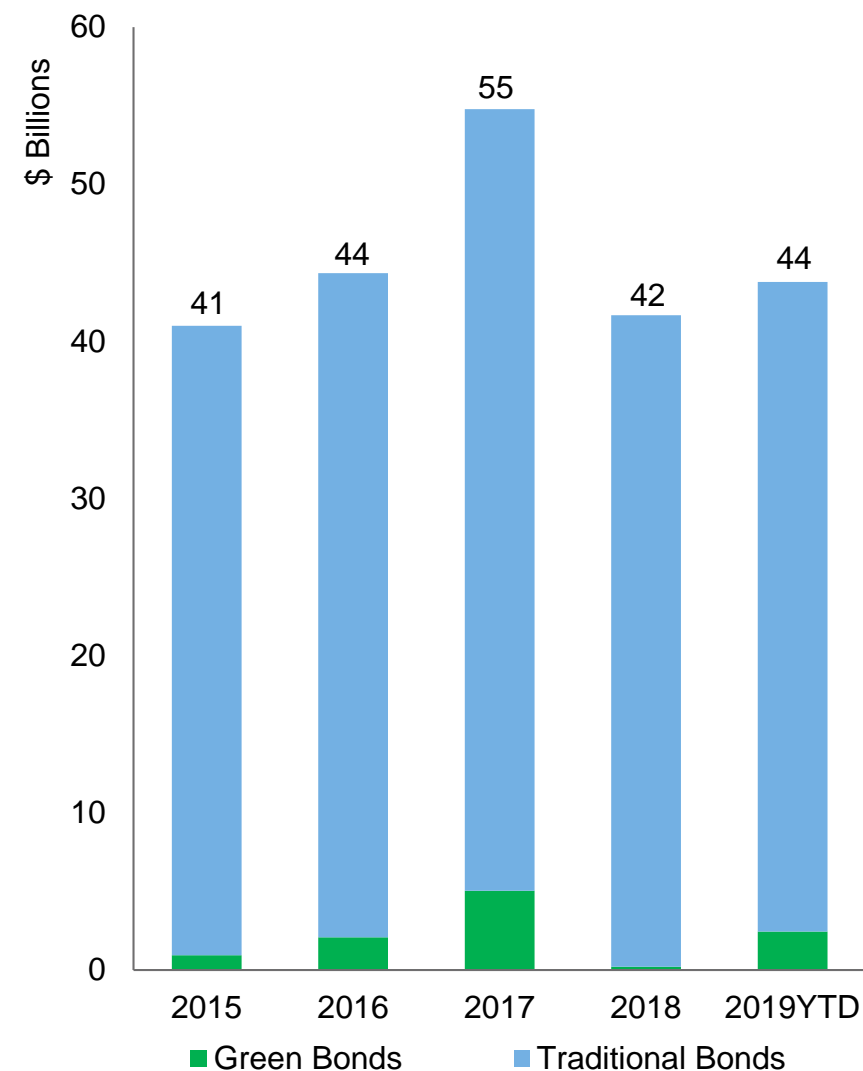
*Other includes Healthcare, Solid Waste, Pollution Control, and Economic Development

Source: Climate Bonds Initiative, Thompson Reuters SDC Platinum as of October 21, 2019

Transportation Green Bond Issuances

\$10.73 Billion in Issuances Since 2015

U.S. Transit Bond Issuance Since 2015



Metropolitan Transportation Authority

Number of Issues: 11
Total Par: \$6.634 billion
All Green Bonds are CBI Certified

San Francisco Bay Area Rapid Transit

Number of Issues: 3
Total Par: \$1.214 billion
All Green Bonds are CBI Certified

Maryland Economic Development Corporation – Purple Line Project

Number of Issues: 1
Total Par: \$313.035 million

Los Angeles County Metropolitan Transportation Authority

Number of Issues: 2
Total Par: \$889.970 million
All Green Bonds are CBI Certified

Central Puget Sound Regional Transit Authority

Number of Issues: 2
Total Par: \$1.343 billion

San Diego Association of Governments

Number of Issues: 1
Total Par: \$335 million

All Issuances Utilized Second Opinions from Third Party Consultants with exception of SANDAG

Source: Thompson Reuters SDC Platinum as of October 21, 2019.

Green Bond Pricing: Analysis from July 2017-June 2019 by CBI

The Climate Bonds Initiative released a study analyzing the performance of Green Bonds in the primary corporate market

Pricing Differential Relative to Traditional Issuance Globally

- § Q1 2018 was the first period in which green bonds have performed better than vanilla equivalents in both EUR and USD in terms of having larger book cover and greater spread compression
- § In H1 2019, EUR green bonds achieved larger book cover, and greater spread compression than vanilla equivalents, on average compared to USD green bonds that priced similar to vanilla equivalents, on average
 - Two thirds of green bonds in CBI's sample priced without new issue premium
 - 53% of green bonds were sold to green investors
 - 28 days after pricing, green bonds tend to have tightened more than their benchmarks, on average

Investors

- § Green bonds tend to have a broader investor base compared to “vanilla” bond transactions
 - 1,905 market participants, representing \$89.7 trillion of AUM in over 50 countries, are signatories of the UN Principles for Responsible Investment
 - Some investors have dedicated taxable environmental, social and governance funds (“ESG funds”)
 - *Examples include Nikko AM, BlackRock, PIMCO, Amundi, Axa AM, Mirova and Calvert*
 - RBCCM senior managed experience with investors with specific interest in municipal Green Bonds include:
 - *Breckinridge, Standish, Wellington, Teachers (taxable), Goldman Sachs AM, JPMorgan AM*
- § Exchange Traded Funds (ETFs) offer a liquid and transparent route for investors to gain exposure to financial markets
 - There have been five green bond ETFs launched since 2017 (One in the US and four in Europe)
 - The rapid growth of these products confirms investor appetite for green bonds
 - The expansion of the green bond ETF space will give additional value to the green bond label which will be used to determine eligibility

Green Bond Funds Holding Municipal Green Bonds

Calvert Green Bond Fund	Breckinridge Short Sustainable Tax-Efficient Fund
iShares Global Green Bond ETF	Breckinridge Limited Sustainable Tax-Efficient Fund
iShares Green Bond Index Fund (IE)	Breckinridge Intermediate Sustainable Tax-Efficient Fund
Shelton Green California Tax-Free Income Fund	Breckinridge Intermediate Sustainable Tax-Efficient II Fund
StateStreet Green Bond Index-Fund	Breckinridge Long Sustainable Tax-Efficient Fund
TIAA-CREF Green Bond Fund	Breckinridge Broad Maturity Sustainable Tax-Efficient Fund

Source: Climate Bond Initiative, PRI Annual Report 2018



Certification of Green Bonds

Green Bonds can be certified by a third-party or through a rating agency review process

Certification / Assessment

Considerations

Third-Party Certification

Kesterk Verifiers	Turner & Townsend
Vigeo Eiris	Ch2m
PwC	BAM
KPMG	EY
Sustainalytics	Deloitte

- § Several analytic and accounting firms provide a certification that the projects funded by bond proceeds meet the Green Bond Principles
- § Certification undertakes no additional diligence as to the administration of bond proceeds once the issue is closed
- § Several Green Bond issues have utilized third-party certification

Rating Agency Assessment

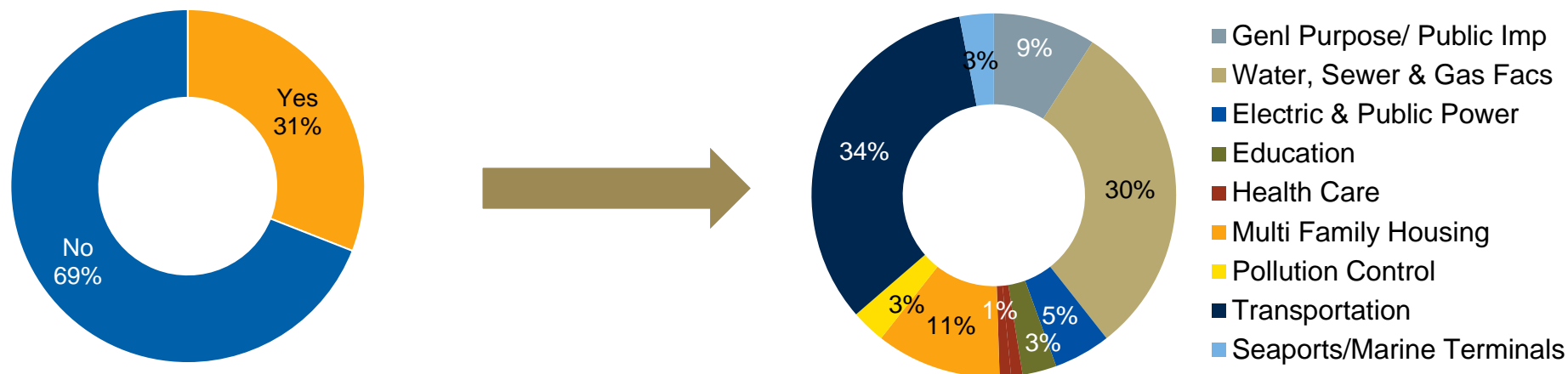
Moody's
S&P Ratings

- § Both Moody's and S&P have introduced Green Bond assessment methodologies
- § Each methodology will assign a score to an issue or capital program that reflects the agency's confidence that bond proceeds will be spent on environmentally-friendly purposes

Second Opinions/Third Party Certification of US Municipal Green Bonds

Although a large volume of global Green Bonds obtain second options, only 45 US municipal issuers utilize third party review

US Municipal Green Bond Second Opinions and Certifications



Select Second Opinion/Third Party Certifications

Date	Par (\$ Million)	Issuer	State	Series	Issue Description	Use of Proceeds	Second Opinion	Climate Bond Certified (Y/N)
10/17/2019	100.920	NYS Housing Finance Agency	NY	2019 Series N & O	Affordable Housing Rev Bonds	Multi Family Housing	Sustainalytics	Y
10/08/2019	104.010	District of Columbia Wtr & Swr Au	DC	Series 2019 A	Public Util Sub Lien Rev Bonds	Water, Sewer & Gas Facs	Vigeo	N
10/08/2019	247.810	San Francisco City/Co-California	CA	Series 2019 A	Certificates of Participation	Genl Purpose/ Public Imp	Sustainalytics	Y
09/10/2019	2.340	Harris Co MUD #1	TX	Series 2019	Unlimited Tax Bonds	Water, Sewer & Gas Facs	BAM GreenStar	N
08/28/2019	15.675	Los Angeles Harbor Dept	CA	2019 Series C-1	Refunding Revenue Bonds	Genl Purpose/ Public Imp	Sustainalytics	N
08/27/2019	5.370	Hot Springs City-Arkansas	AR	Series 2019	Waterworks Revenue Ref Bonds	Water, Sewer & Gas Facs	BAM GreenStar	N
08/26/2019	13.280	Porter Special Utility Dt	TX	Series 2019	Waterworks System Revenue Bonds	Water, Sewer & Gas Facs	BAM GreenStar	N
08/08/2019	422.430	Metropolitan Transport Auth (MTA)	NY	Series 2019 C	Transportation Rev Green Bonds	Transportation	Sustainalytics	Y
07/30/2019	643.500	San Fran Bay Area Rapid Trans Dt	CA	2019 Series G	General Obligation Bonds	Transportation	First Environment	Y
07/25/2019	73.685	California Poll Control Fin Auth	CA	Series 2019	Solid Waste Disposal Rev Bonds	Pollution Control	Stephen Vajda Consulting	N
07/18/2019	76.335	Battery Park City Authority	NY	Series 2019 C	Senior Revenue Bonds	Genl Purpose/ Public Imp	Sustainalytics	Y
07/16/2019	59.640	Sacramento MUD (SMUD)	CA	2019 Series G	Electric Revenue Bonds	Electric & Public Power	Kestrel Verifiers	Y

Source: Thompson Reuters SDC Platinum; as of October 21, 2019

Overview of Climate Bonds Standard and Certification Scheme by Climate Bonds Initiative

A FairTrade-like labeling scheme for bonds

- § A Climate Bonds Certified Bond has been checked with a standardized and transparent methodology that is aligned with the Paris Agreement goals (2 degrees Celsius warming limit in the Paris Agreement) and is more rigorous than a Second Opinion
- § The Climate Bonds Standard consists of a Certification process, pre-issuance requirements, post-issuance requirements and a suite of sector-specific eligibility & guidance documents
 - The Standard is developed using public consultation, road testing, and expertise from experienced green bond market actors and is amended annually
- § This certification allows issuers to demonstrate that their bonds align with industry standards for climate integrity, management of proceeds and transparency
- § In 2016 and 2017 CBI-certified and CBI-aligned bonds totaled over \$87bn, and 155.5bn, respectively
 - At the end of June 2018, CBI reports approximately \$1.45 trillion of outstanding climate aligned bonds



Source: <https://www.climatebonds.net/standard/about>; CBI report—"Bonds and Climate Change – The State of the Market 2018"

Today's Speakers

- Nathan Macek, *WSP*, nathan.macek@wsp.com
- Dina Shafer, *USDOT*, Dina.Shafer@dot.gov
- John Dionisio, *Meridiam*,
J.DIONISIO@meridiam.com
- Andrew Mendelson, *RBC Capital Markets*,
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- Barney Allison, *Nossaman LLP*,
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TRB

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