## Data on Public-Private Partnership Projects

#### Research Note

#### **DRAFT**

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## **Synopsis**

Limited availability of public-private partnership (P3) project data has posed considerable challenges for researchers trying to draw policy-relevant lessons from experiences to date. There are several databases, both in the public domain and the commercial domain, that focus on P3s in various sectors and with different geographic scopes. This research note will introduce some of these databases that researchers may find useful, describing the characteristics of each and summarizing their coverage and included variables (see Appendix). The literature that empirically evaluates performance of transportation P3s will also be briefly summarized, in order to characterize the challenges that scholars have faced in conducting such analyses.

#### Issue

Information regarding public private partnerships, particularly on their projectlevel benefit (e.g., cost-saving innovations of private contractors) and

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construction and operation costs, is closely associated with the profitability of the private partner. Therefore, such data are usually not available to the public. Project data in the public domain are typically available because of the mandate in states' P3 enabling legislation, or because of public lending programs assisting P3s that disclose their activities pertaining to these projects. Proprietary information is also available for financial, engineering, consulting and construction firms to assist their investment decisions. Scholars have employed a variety of approaches to investigating the performance of P3s (e.g., whether alleged benefits have materialized) to draw policy insights.

### **Experience to date**

This section will first review available P3 project databases, and then briefly discuss the state of literature on empirical investigation of transportation P3s to date. The discussion will highlight the difficulty of conducting coherent cross-project analysis.

The extent of information available about transportation P3 projects varies, depending on their sponsoring public authorities and the disclosures they require. On the one hand, the Commonwealth of Virginia is very open regarding P3 project information, requiring disclosure of all relevant project documents for its P3 projects, available from the website of the Office of Transportation Public Private Partnerships.

On the other hand, some states do not make much P3 information publicly available. For instance, regarding the Commonwealth of Massachusetts, information available in the public domain regarding its MA Route 3 North project is very limited.

Such official information, if available, can typically be accessed through state government sources such as their websites. Also, some P3 projects have their own websites for public relations purposes. The U.S. Department of Transportation, the U.S. Federal Highway Administration, and the U.S. Federal Transit Administration publish a biannual report on the conditions and performance of highways, bridges and transit facilities. The discussion on P3s in this report is limited to a programmatic description, and its statistics only encompass public investments, while private investments in equivalent asset classes are not included (U.S. Department of Transportation 2013).

There are also a number of organizations that conduct independent industry research and make their products available to the public. For instance, the National Council for Public-Private Partnerships (NCPPP) has conducted a number of case studies, which predominantly consist of descriptions and discussions of their innovations and "policy lessons." Eleven case studies of transportation P3s have been published and posted on the NCPPP website.

There are several databases, proprietary and non-proprietary, that provide information on P3 projects from distinct dimensions and various sectoral and geographic scopes. This section will briefly describe the following databases:

- Public Works Financing Major Project Database;
- U.S. Federal Highway Administration Office of Innovative Program Delivery Project Profiles;
- The Inframation Group PPP Project Database;
- World Bank Private Participation in Infrastructure Database;
- The Guardian PFI Contract Full List Database;

- European PPP Expertise Center (EPEC) by European Investment Bank (EIB);
   and
- Electronic Municipal Market Access (EMMA) by Municipal Securities
   Rulemaking Board (MSRB).

Specific variables included in these databases are summarized in the Appendix.

Lastly, Bent Flyvbjerg's mega project database is also known, but since it is available only for his collaborators this database will be discussed only briefly.

#### **Public Works Financing**

## **Major Project Database**

Public Works Financing is a monthly publication that focuses on the P3 market in the U.S., providing industry news to practitioners, scholars and decision makers. Its Major Projects Database is accessible to newsletter subscribers, and provides information on privately developed public infrastructure projects at various points in their lifecycle, updated weekly based on reports from private firms in the industry, government agencies, company websites and correspondence between the editor and key industry participants. The database covers 3,816 projects (of which 2,496 are closed projects) across more than 120 countries and regions in various sectors (transportation, buildings, water, wastewater, etc.). With regard to its coverage of highway projects in the U.S., 112 P3 and Design-Build motorway, toll motorway, and toll bridge and tunnel projects that reached financial close from 1993-2012 are included. The database includes only key project parameters (e.g., costs, lane-mileage, contract types, etc.), while it does not contain documents or details of particular P3s.

**U.S. Federal Highway Administration Office of Innovative Program Delivery Project Profiles** 

The U.S. Federal Highway Administration promotes sound use of innovative delivery models for transportation projects through various technical and financial assistance programs. As part of its effort, the Office of Innovative Program Delivery (OIPD) provides a database of major transportation infrastructure projects that employ one or more innovative delivery models, including project delivery (as defined by OIPD), project finance, public-private partnerships, TIFIA assistance, road pricing revenue, and non-road pricing revenue. The database covers 83 projects in the U.S. that are operating or are underway. The project profile is a sector-specific database, and its strength is the links to external information sources and contact information of project key individuals.

## **The Inframation Group**

## **PPP Project Database**

The Inframation Group is a private firm that provides industry information primarily for investors and financial institutions. Their proprietary information products relevant to the P3 industry are: InfraNews, InfraAmericas, InfraDeals, and InfraLatinAmerica.

InfraDeals, in particular, provides real-time transaction data on P3 projects around the world, currently covering approximately 7,000 projects in various sectors (environment, power, renewables, social, and transport) and subsectors (airports, bridges and tunnels, light rail, rail, ports, roads and street lighting). InfraAmericas contains project information for the U.S., Canada, and Mexico. Subscription to these products also allows one to investigate information regarding P3 project equity investors, including their asset portfolios, on-going transactions, and transaction histories. The Inframation Group also provides

brief case studies of selected P3 projects and their notable characteristics relevant for investors' decision making.

#### **The World Bank**

#### **Private Participation in Infrastructure Database**

The World Bank is a multi-lateral financial institution that provides financial, technical and other assistance to the least developed countries and those that are developing with emerging economies. Infrastructure is one of its main focus areas, and the institution has an extensive portfolio of infrastructure projects in most sectors. It has promoted the use of Private Participation in Infrastructure (PPI, its term for P3s) for delivering infrastructure projects and services. The Public-Private Infrastructure Advisory Facility (PPIAF) was established by the World Bank as a multi-donor trust fund to provide assistance for governments to facilitate markets favorable for private participation in infrastructure delivery.

The PPIAF website has a Knowledge Center, where government officials can learn and develop capacity to effectively engage in PPIs, and its PPI Database contains information regarding more than 3,800 PPI projects in 150 developing and middle-income countries in sectors such as transport, energy, telecommunications, water and waste water. The focus of the database is project contractual arrangements, financial structure and other relevant project specific information. While the coverage is vast, detailed project information, such as design specification, financial terms, and other important documents, is not available in this database.

#### **The Guardian**

PFI Contract Full List Database (UK PFI)

The United Kingdom (U.K.) was a pioneer of the P3 industry with its Private Financing Initiative policy (PFI). The policy was initially introduced in 1992 to allow and encourage involvement of private firms to deliver infrastructure projects and services. Concerns were raised regarding the experience of some of the PFI projects, including windfall gains to private equity investors, inefficiently flexible contracts, and lack of transparency regarding future liabilities to taxpayers. In response, the "PF2" program was introduced in 2012, which established a new set of standards for PFI projects to address these issues (HM Treasury 2012).

Her Majesty's Treasury (HM Treasury) publishes a summary of PFI projects for the latest fiscal year, but it is difficult to find information on projects in the past. Based on the information from the HM Treasury's PFI project statistics, the Guardian, a British newspaper, makes publicly available PFI projects of all years in a coherent manner.

A notable characteristic of this source is that financial obligations to the government for all future years are included, allowing one to estimate in aggregate how much financial burden PFI projects will impose on the public. The dataset encompasses 718 projects that reached financial close between 1992 and 2012 in sectors including schools, IT, waste, police, library, hospital, service centers, social care, housing, and transport. Subsectors within the transport sector include street lighting, highway maintenance, and other transport.

#### **European Investment Bank (EIB)**

## **European PPP Expertise Center (EPEC)**

European nations have extensive experience with P3s, not only in the transportation sector but also in other sectors such as health and education. The

European Investment Bank (EIB), which is a part of the European Union and represents the interests of EU member states, provides financial assistance with favorable terms to infrastructure projects in the region, including P3 projects. The European PPP Expertise Center (EPEC) publishes policy insights from its analysis of assisted projects. Their PPP project database is made publicly available, encompassing 165 projects completed between 1999 and 2012 in European countries in various sectors (transport, education, water/sewage, health, energy, waste, and services). The coverage is apparently limited to projects that receive assistance from the EIB; however, some of the important project documents, such as their Environmental Impact Assessment excerpts, are included and directly accessible.

## **U.S. Municipal Securities Rulemaking Board (MSRB)**

## **Electronic Municipal Market Access (EMMA)**

EMMA is a database of virtually all U.S. municipal bonds and activities pertaining to these bonds accessible to all for no cost. MSRB provides this service to facilitate market transparency, and a variety of market analysis reports are made available to the public as well. This database is relevant for P3 projects with financial arrangements that involve issuance of bonds in the U.S. In particular, details of project-specific revenue bonds, notably their official documents, provide valuable project information including revenue projections, assumptions behind the financial models, and most importantly various parameters of contractual agreements. Most of the official documents are scanned PDFs. Typically, bonds are issued as a series of separate products for mega-projects (common in the P3 market).

Project details included in the official documents may be relevant only as of the issuance of the bond, and hence may become outdated as the project develops. Projects may also be refinanced. These factors all add complexity to any analysis of these projects.

In theory, a public agency may also issue general obligation bonds and use part or all of the proceeds for public contributions to a P3 project. In such cases, a P3 project would be part of a package of multiple projects to be financed by the bond, hence project analysis may be challenging.

Information on all P3 projects for which revenue bonds or Private Activity Bonds (PABs) are included in their financial packages should be accounted for in this database. However, it is difficult to filter out only P3-related bonds in the universe of all municipal securities. Therefore the coverage of this database is unknown. We have confirmed the availability of information regarding several projects, most notably the I495 Capital Beltway Express Lanes project in Virginia.

Bent Flyvbjerg, Professor and Chair of Major Programme Management at Oxford University, has extensively investigated the risks of mega-projects, focusing on cost and schedule overruns of construction and overly optimistic demand projections. His analyses are based on a database of major projects. On his website, he invites researchers to collaborate and to pool their data on all project types, both public and private, with his own database for joint studies and publications.

## **Empirical Analysis of P3 Performance in the Literature**

As Hodge (2010) discussed, empirical performance measurement of P3s has not been substantive, due to the limitation of available data. Whether these

projects have achieved value for money is still empirically unsettled. In particular, rigorous empirical analysis or meta-analysis is very limited or of questionable quality, and only narratives and anecdotal information is available. Comparisons with counterfactual public provision scenarios in the literature are vague and not quantified. Few studies actually analyzed empirical project data after the completion of project life. Hodge therefore concluded that data limitations posed considerable challenges for researchers' empirical analysis of P3 project performance (Hodge 2010).

There have been attempts to empirically investigate the costs and benefits of P3s from various perspectives. The first type of literature compares the cost and schedule overruns between public procurement and P3s. Most P3 projects are incentivized in their contractual agreements to complete construction and open to traffic on time. Many transportation project contracts include penalties for construction delays. Thus, to test the hypothesis that P3s do provide benefits through effective control of construction schedule and cost, scholars have analyzed construction plans as of the contract award date and reports upon completion.

Raisbeck et al. (2010) analyzed data in the public domain regarding 21 P3 projects and 33 publicly procured projects in the transport, water, IT, and social sectors in Australia, in terms of their schedule milestones and original bidding prices (2010). They found that the variance of actual costs and schedules relative to the original plans was much larger for publicly procured projects than the P3s.

The U.S. has a smaller number of transportation P3 projects, and conducting inferential statistical analysis has been difficult. Chasey et al. (2012) gathered data on 12 completed P3 highway projects greater than US\$90 million

regarding their cost and schedule overrun, and compared the performance with equivalent statistics in the literature on publicly procured highway projects. They found that the P3s' average 0.81% cost and -0.30% schedule overruns were better than the average 1.49% cost and 11.04% schedule overruns of publicly procured projects. However, the findings were too early to be considered conclusive on the question.

If detailed project contract documents are available, it is possible to analyze the cost differences of P3s and traditionally procured projects. In some cases, such documents are available in the public domain (e.g., Virginia). In other cases, researchers analyze limited access data and publish only the results (e.g., European Investment Bank, or EIB). Blanc-Brude et al. (2009) compared the cost differences of P3s and publicly procured highway projects that received funding from the EIB using confidential project documents. Testing the hypothesis that P3s would demonstrate higher costs because of the premium of the risks transferred to the private partner and the engineering specifications designed to optimize life cycle cost saving, they used the data on 227 road projects across the E.U., of which 57 were P3s. Their Ordinary Least Square regression estimation suggested that the costs of P3s were 24% higher than the traditionally procured projects.

Makovšek (2013), in response, suggested that the interpretation of the cost difference in the aforementioned study – that the higher costs of P3 projects are largely due to the transfer of construction risk to the private partners – might not be entirely correct. The cost differences might also be due to the potential for changes in project scope (more likely for traditionally procured projects than P3 projects, from respective reference points), as well as the incentives for on-time

completion that are commonly embedded in P3 contracts. Makovšek demonstrated the need for more sensible and fair comparison of the costs and efficiencies of the P3s and traditional procurement models.

The discussion above summarizes previous statistical studies on the subject of performance of P3s. In analyzing the costs and benefits of P3s, scholars have resorted to data in the public domain, surveys administered to stakeholders and industry experts, and the internal documents of financial institutions that provide funding to the infrastructure projects. In terms of comparing the differences between P3s and publicly procured projects, the data from financial institutions that are involved in both P3s and publicly procured projects present the potential to be able to test hypothesized performance differences. It should be noted, however, that these data are all with regard to ex ante project data (i.e., as of financial close), and there are no empirical studies on the performance of P3s during the operational stage to date.

#### Further research needed

As is evident in the discussions above, a closer look at the information in each of the databases introduced above will be essential. Although the literature review pointed to one dimension of research on P3s, there are a number of different dimensions of P3s that are relevant for policy discussions. Explorations of other possibilities will also be indispensable.

#### **Preliminary findings**

This research note has introduced several sources of P3 project information. It is premature to conclude anything about the prospect for possible analyses that these databases may allow. While a number of P3 projects are

implemented, ex post data are scarce. There are a number of approaches that are believed to protect the public sector from unanticipated costs. It is noteworthy that there is an inherent tension between transparency and cost saving potential of P3s. The profitability of these projects depends on the competitive advantage of private companies in introducing innovations to minimize costs while delivering the required levels of service. If transparency is required at every level of a P3 project, that advantage disappears, and the project is no longer attractive to private firms, which would be detrimental to a public that needs the service or the infrastructure. In this regard, a right balance has to be struck at the policy level. Similar tensions exist in the domain of design contracting and construction contracting, where proprietary data are also often withheld.

One of the fundamental characteristics of P3s is the ability for the public sector to transfer certain project risks to the private partner. Although the premium for the risk may be considerable, one may argue that, by doing so, the public will at least be able to avert taking risks that are undesirable to be retained on the public sector side. A cautionary note is still warranted that project specific risks will still need to be properly understood, and for that reason a certain degree of public disclosure of project information is essential.

## Bibliography

- Blanc-Brude, Frédéric, Hugh Goldsmith, and Timo Välilä. 2009. "A Comparison of Construction Contract Prices for Traditionally Procured Roads and Public-Private Partnerships." *Review of Industrial Organization* 35 (1): 19–40. doi:10.1007/s11151-009-9224-1.
- Chasey, Allan, William Maddex, and Ankit Bansal. 2012. "Comparison of Public-Private Partnerships and Traditional Procurement Methods in North American Highway Construction." *Transportation Research Record: Journal of the Transportation Research Board* 2268 (December): 26–32. doi:10.3141/2268-04.
- HM Treasury. 2012. *A New Approach to Public Private Partnerships*. London: HM Treasury. https://www.gov.uk/government/uploads/system/uploads/attachment\_

- data/file/205112/pf2\_infrastructure\_new\_approach\_to\_public\_private\_parnerships\_051212.pdf.
- Hodge, Graeme A. 2010. "Reviewing Public-Private Partnerships: Some Thoughts on Evaluation." In *International Handbook on Public-Private Partnerships*, edited by Graeme A. Hodge, Carsten Greve, and Anthony E. Boardman, 81–111. Elgar Original Reference. Cheltenham; Northampton, MA: Edward Elgar.
- Makovšek, Dejan. 2013. "Public-Private Partnerships, Traditionally Financed Projects, and Their Price." *Journal of Transport Economics and Policy* 47 (1): 143–55.
- Raisbeck, Peter, Colin Duffield, and Ming Xu. 2010. "Comparative Performance of PPPs and Traditional Procurement in Australia." *Construction Management and Economics* 28 (4): 345–59. doi:10.1080/01446190903582731.
- U.S. Department of Transportation. 2013. "2013 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance". Report to Congress. Washington, D.C.

http://www.fhwa.dot.gov/policy/2013cpr/pdfs/cp2013.pdf.

## **Appendix Variables of P3 Project Databases**

## **Public Works Financing Major Project Database**

- Project name
- Sector and subsector (e.g. transport, toll motorway)
- Description (e.g. 30 yr-DBFOM availability-pay contract to replace existing 1.6-mile motorway...)
- Financiers (bank loan, equity, etc. with amounts, and restructures if applicable)
- Private Advisors (firm names)
- Builders / Operators (firm names)
- Public Sponsor (agency names)
- Bank Advisors (firm names)
- Public Advisors (firm names)
- Private Sponsor / Developer (firm names and equity share, if applicable)
- Status (History with dates of key events)
- Financial Close (Date)
- Project cost (US\$, official announcement of public sponsor on contract amount)
- Contract Type (DB, DBF, DBFOM, lease, etc.)

## U.S. Federal Highway Administration Office of Innovative Program Delivery: Project Profiles

- Project name
- Location
- Project Sponsor / Borrower
- Program areas (of the aforementioned innovative delivery models)
- Fiscal year approved
- Mode (of transportation)
- Description
- Cost (total cost and amount by project components)
- Funding Sources (amount by sources)

- Project delivery / contract method (e.g. Design-Build)
- Private partner (SPV and participating firms' names, and respective equity shares)
- Project advisor / consultants
- Lenders (firm/agency names)
- Duration / status
- TIFIA credit assistance (assistance type and amount)
- Financial status
- Innovations (description)
- Related links / articles (external sources of information)
- Contacts (contact information)

## The Inframation Group PPP Project Database

## Project Profile

- Project name
- Sector and subsector
- Status
- Region (e.g. Europe)
- Payment Mechanism (e.g. availability-based)
- Amount (e.g. EUR3200m)
- Country (Italy)
- Overview (e.g. concession for a 37km section of motorway...)
- Sponsor Information (equity sponsor name, allocation (percentage), amount)
- Funding (e.g. Loan arranger names and amount)
- Project Advisory Roles (Firm names)
- Key Dates (e.g. financial close, bidders shortlisted)
- Project History

#### Owner Profile

- Investor Name
- Profile (brief description e.g. "... is an unlisted open-ended perpetual life fund managed by...")
- Country
- Primary Role (e.g. Infrastructure Fund)
- Web Address
- Investments by Country (a pie chart of values by country)
- Investments by Sector (a pie chart of values by sector, e.g. water, transport)
- Current Asset Portfolio: Asset name; sector; sub-sector; region; country; equity holding (value), date of valuation, equity holding %, date of investment
- Realized Assets: asset name; sector; sub-sector; region; country; realized value; realized equity holding (%); date of realization
- Live Bids: asset name; sector; sub-sector; region; country; status; next milestone; milestone date
- Recent Activity: Action; Date of Occurrence

#### Transaction Profiles Case Studies

- A narrative of approx. 500 words regarding the nature, history and financial profile of projects. A summary of transaction profile includes:

debt class; facility type; amount; lead arranger; participating banks; borrower; project sponsors; sponsors equity (amount); and debt-equity ratio

## **World Bank Private Participation in Infrastructure Database**

- Project Name
- Region
- Country
- Income Group (of project country)
- IDA (International Development Association, (WB's Fund for the Poorest) status
- Financial Close
- PPI Type (e.g. concession, greenfield)
- PPI Subtype (e.g. Build-Rehabilitate-Operate-Transfer, management contract, Build-Operate-Transfer)
- Project Status (e.g. Operational)
- Primary Sector (e.g. Transport)
- Secondary Sector (not applicable to transport)
- Subsector (e.g. roads, airports)
- Segment (e.g. runway and terminal, highway, bridge)
- Location (e.g. Guangzhou and Shenzhen, Guangdong Province)
- Contract Period (e.g. 45 year)
- Termination Year (e.g. 2040)
- Publicly Traded (Yes/No)
- Stock Exchange (Local, International, Local&International)
- Multiple Systems (Yes/No)
- Number of Systems (e.g. 1, 2)
- Captive Facility
- Share Percent
- Government Granting Contract (federal, state, local)
- Type of government support (e.g. revenue guarantee)
- Investment Year
- Percent private
- Government Payment Commitment
- Physical Assets
- Total Investment
- Government Cash Assistance
- Date status updated
- Capacity Type (e.g. number of runways, throughput, kilometer)
- Capacity (numerical)
- Capacity Year
- Technology (e.g., liquid bulk terminal, container terminal, multi-purpose terminal)
- Contract History
- Related Projects
- Bid Criteria
- Award Method
- Number of Bids
- Number of Renewal Bids

- Sponsors (Private equity sponsor name with percent equity capital)
- Multi Lateral Support (organization name, support type, amount, year)
- Revenue Source (e.g. user fees)
- Development Stage
- Funding Year
- Private Funding
- Public Funding
- Government Funding
- Bank Local Funding
- Donor Funding
- Debt Equity Grant Ratio
- Equity Funding Private Source
- Is PPP Project
- PPP Type
- Related Infrastructure by Government
- Concession Period Type (e.g. fixed term)
- Key Features of Revenue Cost (e.g. tariff adjusted every two years)
- Key Features of Guarantee (e.g. the government will guarantee a minimum revenue of US\$344 million...)
- Total Cost of Public Project
- Is PPP Part of Public Project
- Project Banks (e.g. BNDES)

#### The Guardian PFI Contract Full List Database (UK PFI)

- Unique HMT Project ID
- Project Name
- Department (e.g. DfT)
- Procuring authority (e.g. Hounslow LA London borough council)
- Sector (e.g. Roads and Highway Maintenance
- Constituency (e.g. Brentford and Isleworth; Feitham and Heston)
- Region (e.g. London)
- Project Status (e.g. inOperation)
- Date of OJEU (date)
- Date of preferred bidder
- Date of financial close
- Date of construction completion
- First date of operations
- Operational period of contract (number of years)
- Funding requirement (£)
- Unitary charge payment for each fiscal year between 1992-2060 (£)
- Equity holder name (holders 1-6)
- Equity holder share (holders 1-6, %)
- Equity holder change of ownership since March 2012 (holders 1-6)
- SPV name
- SPV company number
- SPV address
- Soft FM lead (firm name)
- Soft FM group company
- Hard DM lead (firm name)

- Hard FM Group company
- Has the project ever been refinanced? (Yes/No)
- Periodic insurance review (e.g. available & conducted, available but not conducted, not sure if available, not available)
- Insurance review amount (£)

## **European PPP Expertise Center (EPEC) by European Investment Bank (EIB)**

Description

Project Amount

Sector

Country

Signature date

Project Name

- Promoter Financial Intermediary
- Location
- Description
- Objective
- Comments
- Sector
- Proposed EIB finance (Approximate amount)
- Total cost (Approximate amount)
- Environmental aspects (description)
- Procurement (relevant regulations)
- Status
- Related Documents (e.g. Environmental Impact Assessment excerpts)

# Electronic Municipal Market Access (EMMA) by Municipal Securities Rulemaking Board (MSRB)

Security Details

- Security name (e.g. Capital Beltway FDG CORP VA TOLL REV VAR-SR LIEN 495 HOT LANES-A)
- CUSIP (Committee on Uniform Security Identification Procedures) code
- Dated Date
- Maturity Date
- Interest Rate
- Principal Amount at Issuance
- Initial Offering Price
- Initial Offering Yield

### Official Statement

- Financial Information & Documents
  - o Annual Financial Information and Operating Data
  - Audited Financial Statements or CAFR (Comprehensive Annual Financial Report)
  - o Interim / Additional Financial Information / Operating Data
- Event Notice
- Advance Refunding Documents

#### Trade Activity

- Trade Date/Time
- Settlement Date

- Price
- Yield (%)
- Trade Amount (\$)
- Trade Submission Type (e.g. Customer sold, Customer bought)

## VRDO (Variable Rate Demand Obligation) Information

- Maximum Rate (%)
- Minimum Rate (%)
- Minimum Denomination (\$)
- Notification Period (e.g. 7 days)
- Reset Period (e.g. 7 days)
- Remarketing Agent (firm name)
- Liquidity Facility (e.g. LOC)
- Provider Identity
- Expiration
- VRDO Documents
- VRDO Rate History: reset date and time; interest rate; rate type; rate effective date; aggregate par amount bank bonds; aggregate par amount investors and remarketing agent

## Ratings

- Long-Term Issue Rating (e.g. BBB+, effective 03/27/14)
- Long-Term Issue Rating Alert Code (e.g. RO: Neg, effective 03/27/14)
- Unenhanced Long-Term Issue Rating (e.g. NR)
- Unenhanced Long-Term Issue Rating Alert Code
- Short-Term Issue Rating (F2, effective 03/27/2014)
- Unenhanced Short-Term Issue Rating (e.g. NR)