

Peer Review of U.S. Toll Roads

Attribute Assessments, Metrics, and Ratings

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Related Research

[Quarterly Toll Road Trend Data \(February 2013\)](#)

[2013 Outlook: U.S. Transportation Infrastructure \(December 2012\)](#)

[Fiscal Cliff Would Stress U.S. Transportation Infrastructure \(November 2012\)](#)

[East Coast Transportation Assets \(November 2012\)](#)

[Rating Criteria for Toll Roads, Bridges, and Tunnels \(July 2012\)](#)

[2012 Midyear Outlook: U.S. Transportation Infrastructure Volumes Stable, but Crosscurrents Continue \(July 2012\)](#)

Overview

Fitch's global rating criteria for toll roads, bridges and tunnels (toll roads or roads) identifies five key rating drivers implicit in all toll road ratings: the resiliency of the traffic volume; the toll rates and the demonstrated willingness and ability to increase rates (price); the toll road's approach to infrastructure development and renewal; the financial risk associated with the toll road's debt structure; and the level of financial flexibility to pay debt service.

Fitch Ratings assesses each of the five attributes as being "stronger," "midrange," or "weaker." These qualitative assessments are informed by quantitative metrics that are examined based on both their historical and projected evolution, not simply a point in time calculation.

Attribute assessments help frame the credit rating of a toll road and provide a standard way of comparing toll roads to each other, domestically and across the globe, as well as to other infrastructure assets. However, this report only highlights the distribution of assessments for each key rating driver by rating category for the U.S. toll roads covered by Fitch. The report also provides an indication of the relative significance of each of the rating drivers and what conditions can lead to one driver outweighing the others, resulting in a higher or lower rating than would otherwise be expected based on the relative franchise strength of the toll road. Specific examples of what constitutes a stronger, midrange and weaker assessment for each attribute are also provided.

The chart to the right shows the distribution of all of Fitch's public and privately rated U.S. toll roads by rating category. Please refer to Appendix C and D for a full list of rated U.S. toll roads and attribute assessments as of April 29, 2013.

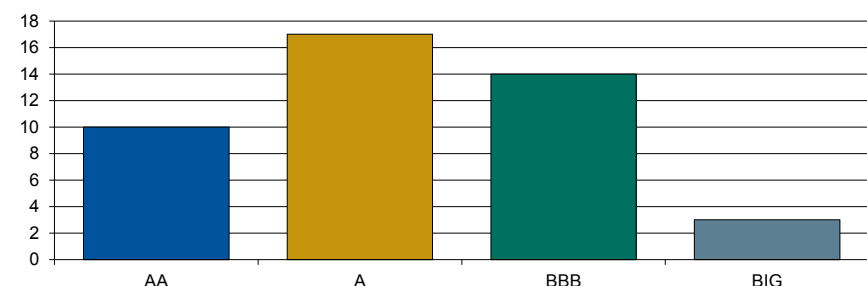
High Ratings Across U.S. Toll Roads: A majority of the publicly rated U.S. toll roads (60%) are in the 'A' category or higher, reflective of the sector's largely public ownership and operations, moderate leverage and resilience despite volume fluctuations. Attribute assessments for toll roads at these rating levels tend to be stronger or midrange across all five key rating drivers, with only seven exceptions. More than 30% of the rated U.S. toll roads experienced rating movements since 2007, but the rating actions were split evenly between positive (upgraded or placed on Rating Outlook Positive) and negative action (downgraded or placed on Rating Outlook Negative).

Volume and Price Risks Are Significant Drivers: Assessments of midrange and stronger for the "Revenue Risk – Volume" and "Revenue Risk – Price" attributes reflect robust franchise strength and can result in the 'A' rating category or higher. Higher assessments demonstrate the strength of both the underlying market and the revenue profile in the face of traffic volatility. While historical traffic and revenue performance are typically good indicators of a toll road's future performance, Fitch also considers other factors such as the road's asset quality relative to its competitive position, traffic composition and elasticity to toll increases.

Leverage as an Offsetting Factor: While Fitch views most U.S. toll roads as having resilient franchises (a combination of volume and price), toll roads with both a strong franchise and a strong assessment for debt service risk are rated in the 'AA' category in this sector. Toll roads with just one weaker attribute for volume or price that operate with very low leverage on a current and prospective basis may achieve an 'A' category rating. Likewise, high leverage or a capital structure with significant market risk can serve to offset an otherwise strong franchise and result in a low or non-investment-grade rating.

Financial Risk Is Limited: While an increasing risk to toll roads is escalating, heavily back-loaded debt to either pay for high initial capital costs or nonsystem investment, most toll roads employ relatively conservative capital structures with typical features that include fixed-rate debt with tenors of 30 years or less and somewhat level aggregate annual debt service requirements. In contrast to toll roads in other global regions, U.S. toll roads have minimal exposure to bullet maturities and refinance risk. Where refinance risk does exist, this issue will typically come in the form of mandatory tenders, replacement/extension of letters of credit, or the use of a commercial paper program as a bridge to longer term fixed-rate debt.

Fitch U.S. Toll Road Ratings



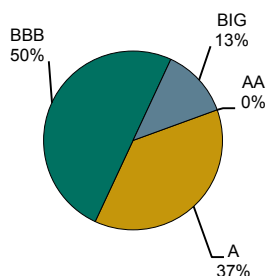
BIG – Below investment grade.
Source: Fitch.

Attribute Assessments

Revenue Risk – Volume: Traffic Base, Composition, and Competition

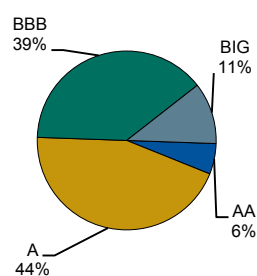
The Revenue Risk – Volume attribute considers a toll road’s underlying market characteristics such as the nature of the asset’s primary function, the type of area the road serves and the level of competition from other toll roads or modes of transportation. A toll road’s volume is primarily influenced by regional and national economic and demographic conditions, congestion and availability of free alternatives, as well as the physical attributes of the road including the route, capacity and level of network interconnectivity. Fitch’s rated U.S. toll roads cover a wide range of facility types from intrastate turnpikes, urban expressway systems and bridge systems to stand-alone greenfield assets and managed lane projects. Approximately 82% of the Fitch-rated U.S. toll roads are split evenly with a stronger or midrange assessment for this attribute. The remaining 18% is assessed weaker. Assessments for the volume attribute broken out by rating category are illustrated below.

Volume — Weaker (% of Total = 18.2)



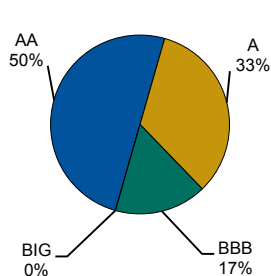
Source: Fitch.

Volume — Midrange (% of Total = 40.9)



Source: Fitch.

Volume — Stronger (% of Total = 40.9)

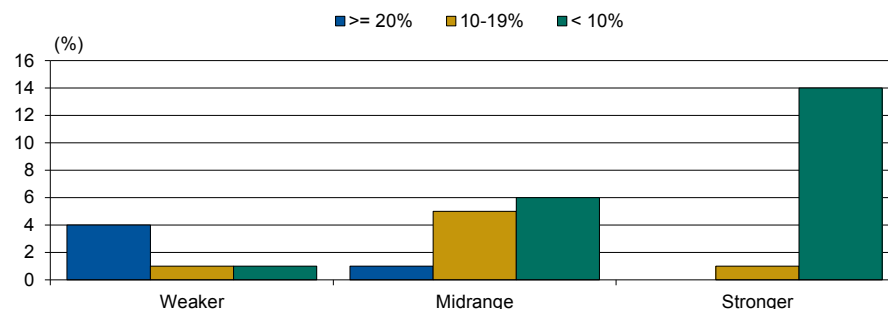


Source: Fitch.

The facilities assessed as stronger include mature highway systems/large networks, bridges/tunnels and urban radial and ring road systems. These roads often serve as critical arteries that connect or provide access to major economic and population centers within and across a state and have at least a 10- to 20-year history of demonstrated demand. Toll roads with stronger assessments for this attribute showed the greatest resilience in the recent economic downturn and have nearly or fully recovered. These include the Bay Area Toll Authority (BATA, CA; traffic fully

recovered), the Harris County Toll Authority (HCTRA, TX; fully recovered) and Maryland Transportation Authority (nearly recovered).

Fiscal 2012 Traffic from Pre-Recession Peak



Source: Fitch.

For some roads, commercial traffic contributes to a large portion of toll revenue, but despite the related volatility, Fitch views stronger assessments as warranted given the importance of these toll roads as primary thruways and their broader strategic role in the national surface transportation network. Some of the toll roads that meet this profile include the Ohio Turnpike Commission (commercial traffic contributes 55% of toll revenues) and the Pennsylvania Turnpike Commission (42%). The New Jersey Turnpike Authority (NJTA), which includes the mostly commuter-based Garden State Parkway, demonstrated slightly higher volatility during the recession, but is also assessed stronger given its size and importance in the interstate highway network.

The relatively large representation of midrange assessments for this attribute is reflective of the fact that many of the rated U.S. toll roads have meaningful competition, are exposed to more leisure traffic, commercial traffic contributes to a large portion of toll revenues, or operate in a limited service area. Some of these facilities include the Maine Turnpike Authority (leisure traffic and some competition), the Central Texas Turnpike System (CTTS, Austin, two of the four segments are more developed and are not expected to grow significantly going forward), and the Dulles Greenway (Washington D.C.; despite declining traffic trends, the metropolitan area is strong with high levels of congestion).

In Fitch’s opinion, many stand-alone facilities also exhibit demand risk, which can vary depending on the asset’s service area and purpose. Since revenues are generated by a single facility, they are more vulnerable to economic cycles and/or changes in the

competitive landscape. As a result, ratings for stand-alone facilities are typically no higher than the 'A' category. Toll roads that meet these characteristics include the Florida Department of Transportation's (FDOT) Alligator Alley that serves a narrow service area as it provides an east-west link only between Miami and Naples, and the Orange County Transportation Authority's SR-91 managed lane that operates in one of the most congested traffic arteries in Southern California between Orange and Riverside Counties, but has experienced declining corridor traffic in recent years.

Generally, toll roads with weaker attribute assessments have weak or very limited service areas, meaningful competition, low volumes, or have historically experienced more significant traffic declines. Although a road that might be classified as midsize by volume can be judged weaker if traffic is exposed to significant volatility or industry risks. This is the case for South Jersey Transportation Authority with 53 million in annual toll transactions, but it is heavily dependent on the Atlantic City gaming industry.

Cross-border facilities are typically exposed to economic activity in the neighboring country and their traffic volumes can be more volatile if demand is driven by any concentrated economic activity or as a result of fluctuations in currency. Most of the Fitch-rated U.S. toll roads that serve as international border crossings have a weak volume assessment, reflecting the high commercial traffic component and exposure to the vagaries of cross-border trade and commerce. These facilities include the Cameron County and McAllen International Toll Bridge Systems (Texas/Mexico) and the Buffalo and Fort Erie Public Bridge Authority (Peace Bridge; New York/Canada). The Texas/Mexico crossings have been particularly vulnerable to the maquiladora industry and the violence related to drug cartels, while the Peace Bridge has experienced traffic declines in nine of the last 12 years due to various reasons, including post Sept. 11 inspections, the strengthening of the Canadian dollar, the SARS epidemic and the recent economic recession. Laredo is the exception with a midrange assessment given its important role in the U.S.-Mexico highway network that is demonstrated by its continued growth in commercial traffic even through the recession. In fiscal 2012, Laredo's commercial traffic surpassed its 2006 peak by nearly 5%.

Fitch expects assessments for the volume rating driver to remain largely unchanged over the foreseeable future. Fitch will continue to monitor monthly traffic trends and will revisit a toll road's assessment for this attribute, if necessary.

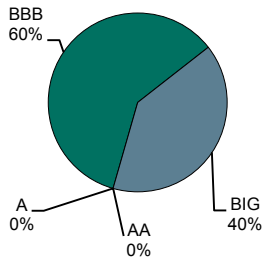
Revenue Risk – Price: Ratemaking Flexibility and Price Elasticity

This attribute largely focuses on a toll road's ability to protect its revenue profile from traffic volatility and evaluates a facility's flexibility to raise revenues through toll rate increases and limit the exposure of volume declines in response to changes in price. Fitch considers the legal framework under which an entity can raise toll rates to meet all of its financial obligations. Since annual operating and maintenance expenses, including major maintenance and rehabilitation tend to grow faster than inflation, Fitch views positively a facility that demonstrates either the legal or economic ability to raise rates, specifically at rates higher than inflation or maintains current toll rates significantly below the assumed revenue maximization point. While unlimited rate-making authority is a stronger attribute, it can be weakened by the political environment in which the asset operates. Public entities have historically limited toll increases or only implemented them in combination with planned capital improvements or system expansions despite the legal or economic ability to raise them (i.e. the existing toll rate may be low relative to any cap, peers, or the revenue maximization point). This practice can cause some timing risk and affect credit quality.

The decision to drive on a toll road is made by an individual based on various factors including cost and time savings. As such, price elasticity is also relevant to this attribute and will vary based on a facility's competitive position, asset type and economic conditions at the time of the toll increase. In general, large networks and bridges have low elasticity given their monopolistic position, but stand-alone facilities that are not part of a ring road or national road link will be more elastic and, by definition, managed lanes are the most elastic. These facilities operate at or just under revenue maximization to ensure free flow traffic speeds. However, if its toll rate is high, elasticity can increase in weaker economic times or with network improvements, despite an asset's competitive position.

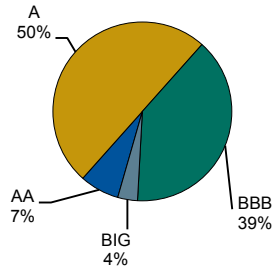
Assessments for the price attribute broken out by rating category are illustrated on the next page. Approximately 25% of the rated U.S. toll roads are viewed to have a stronger attribute assessment in this category. These toll roads have a demonstrated history of raising rates with low elasticity and generally have a low toll rate per mile. One example is the Florida Turnpike that, per statute, will increase toll rates based on the consumer price index (CPI) either annually or every five years. In addition, its \$0.06 mainline toll rate per lane mile is competitive with other turnpikes in the country.

Price — Weaker (% of Total = 11.4)



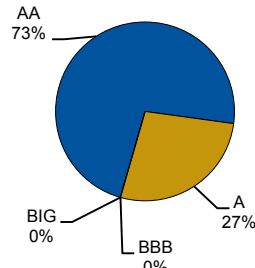
Source: Fitch.

Price — Midrange (% of Total = 63.6)



Source: Fitch.

Price — Stronger (% of Total = 25.0)



Source: Fitch.

The Triborough Bridge and Tunnel Authority (TBTA, New York) is also assessed as stronger despite some of the highest toll rates in the nation. The TBTA has implemented fare and toll rate increases six times since 2003, most recently in March 2013. Traffic was largely inelastic to the previous five increases with annual declines of just 0.6% from 2003–2011. Conversely, toll revenues grew at a 4.9% CAGR over the same period.

The majority of Fitch’s rated U.S. toll roads, approximately 64%, achieved a midrange assessment for Revenue Risk – Price. The CTTS opened fully in 2008, while moderate initial toll rates provided some flexibility; the CTTS implemented its first toll increase in January 2013 and has approved annual CPI-U-based rate increases beginning in January 2014. Meanwhile, both the NJTA and Illinois State Toll Highway Authority operate in a politicized environment, but recently approved toll increases to support their large, multiyear capital improvement programs.

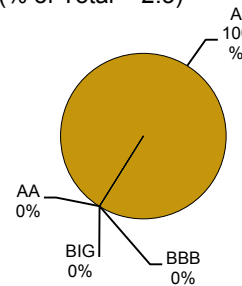
A limited number of toll roads (approximately 11%) were assessed as weaker for this attribute and were all stand-alone facilities. The Foothill Eastern and San Joaquin Transportation Corridor Agencies (FETCA and SJTCA, CA) have high toll rates per mile of more than 30 cents each and depend on frequent toll increases to meet the rate covenant and support growing debt service obligations. A facility will be assessed as weaker when its competitive position has considerably declined, evidenced by lower than historical revenue growth or a decline in revenue following a toll rate increase. In the case of the latter, such facilities may have reached the revenue maximization point.

Fitch expects assessments for the price rating driver to change when a facility experiences higher than anticipated elasticity or management is unwilling to make timely rate increases when necessary.

Infrastructure Development/Renewal: Capital Improvement Planning and Funding Sources

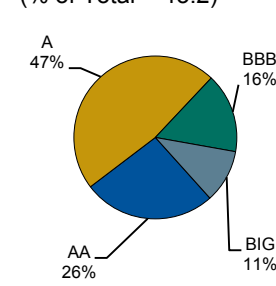
The Infrastructure Development and Renewal Risk attribute considers the approach and size of the toll road’s capital improvement program (CIP), diversity in funding sources, covenant to prefund future needs and history of successful project implementation. The average assessment for this attribute is higher when compared with the other key rating drivers described in this report. As indicated in the charts below, assessments were largely split between the midrange and stronger attributes with only one rated U.S. toll road in the weaker category. This largely reflects the benefits of a dedicated revenue source to support life cycle asset management.

Infrastructure — Weaker (% of Total = 2.3)



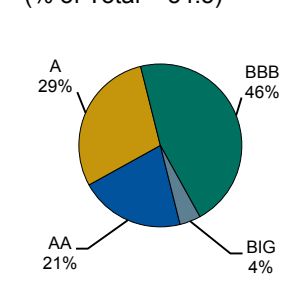
Source: Fitch.

Infrastructure — Midrange (% of Total = 43.2)



Source: Fitch.

Infrastructure — Stronger (% of Total = 54.5)



Source: Fitch.

Fitch considers reinvestment plans and what they mean with respect to economic life and the need for future leverage to preserve the asset. Toll roads that are currently well maintained have accounted for these costs in the financial forecast, and/or have five-year, forward-looking covenants and are viewed as having a stronger attribute. Those with predictable, but higher costs for capital improvement and future expansion or less detailed planning, will be viewed as having a midrange attribute while toll roads with wide open mandates that generally retain high levels of financial flexibility may have weaker assessments if there is uncertainty around the level and timing of future investment. In Fitch’s opinion, a well-managed CIP can reduce the frequency and amount of toll rate increases and stabilize financial metrics such as debt service

coverage and leverage ratios. Fitch will also consider the level of debt funding anticipated for the execution of the CIP.

Toll roads achieving a stronger attribute assessment (55%) are not necessarily facilities that have been completely rehabilitated or opened to traffic within the last five years; these roads have high asset condition scores and well-managed and prioritized CIPs that address both infrastructure renewal needs as well as capacity enhancements, if applicable, to meet future demand. Fitch favorably views expansion projects that serve clearly established needs and are financially feasible without impairing the toll road's existing fiscal position. A successful track record in implementing past capital programs with evidence of on-time and on-budget project delivery is considered a strength.

The attribute assessment is also influenced by the toll road's level of progress through its existing CIP. Roads that have just completed large capital programs and/or are nearing completion tend to achieve higher assessments in this attribute category compared with those that are in earlier stages of the process. Stronger assessments span all rating categories from 'AA' to below investment grade. Some examples include the Bay Area Toll Authority (senior lien rated 'AA-'), Richmond Metropolitan Authority ('A-'), South Jersey Transportation Authority ('BBB+') and the SJTCA ('BB').

Toll roads with a midrange attribute assessment (43%) have adequate infrastructure in place, with capacity to meet future long-term demands. Typically, Fitch will arrive at a midrange assessment when a CIP is moderate in size, but the additional leverage to support the program is relatively high, though there may be some uncertainty regarding the exact level of investment needed or the sources of funding. Toll roads with a midrange assessment that meet this profile include the TBTA and the Pennsylvania Turnpike with more than 90% of the CIP to be debt funded and the Illinois State Toll Highway Authority with more than 40%. Conversely, toll roads that also have midrange assessments include the Western Turnpike, whose asset inspection ratings have incrementally declined since 2003, and some uncertainties exist regarding the CIP or the Ohio Turnpike whose original concrete base is in significant need of replacement.

Fitch notes if a toll road were to move forward with a CIP heavily dependent on speculative demand growth, it would likely result in a weaker attribute assessment because of the uncertainty that it will be implemented. Likewise, if a toll road was to allow its infrastructure to deteriorate to a level significantly below most toll roads,

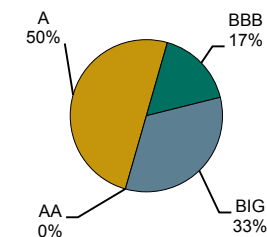
this, too, would result in an assessment of weaker. Only one toll road has a weaker assessment in Infrastructure Development and Renewal, the Rhode Island Tunnel and Bridge Authority (RITBA). Ongoing deferral of maintenance over many years has led to the RITBA's assets in need of considerable remediation. Additional leverage and toll increases will be necessary to address these needs, but management has only increased tolls twice in the last 40 years and may delay future implementation given rising public concern.

During the recent economic downturn, Fitch has seen a trend among public toll road authorities to cut non-essential projects and expansion plans. Fitch has generally viewed this practice as a positive strategy, allowing the authorities to better match capital plans to decreased traffic levels. Future modification to assessments for this attribute will be driven by any changes a toll road makes to its approach to CIP planning and the build up of reserves.

Debt Structure: Risk Inherent in Debt Structure

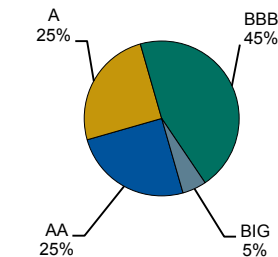
Assessments for debt structure encompass several elements of the toll road's debt profile, including the debt repayment profile in terms of maturity length and amortization profile and the allocation of fixed- and variable-rate debt (VRD) relative to the overall capital structure. Fitch examines exposure to market conditions in the form of refinance risk, unhedged rate risk (basis risk) and interest rate swaps. Fitch notes that the overall utilization of VRD for U.S. toll roads has markedly declined in the last five years following the turmoil in the financial and credit markets. Fitch expects this trend to continue in the near term. Increased use of these products without adequate mitigation could result in a review of these assessments.

Debt Structure — Weaker
(% of Total = 13.6)



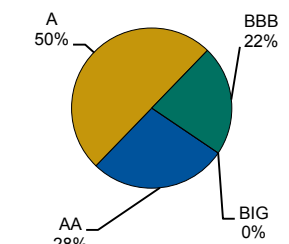
Source: Fitch.

Debt Structure — Midrange
(% of Total = 45.5)



Source: Fitch.

Debt Structure — Stronger
(% of Total = 40.9)



Source: Fitch.

However, VRD exposure is not the only element that drives the debt structure attribute assessment. Structural terms and reserve requirements are also considered. The assessment distribution for the debt structure attribute by rating category is illustrated in the charts at the bottom of page 6.

Toll roads that have achieved an assessment of stronger typically maintain more than 90% of debt obligations in a long-term fixed-rate mode, with minimal exposure to refinance risk, flat or declining debt service profiles, healthy rate covenants (at least sum sufficient on all obligations) and debt service reserve funds (DSRF) that are all or nearly 100% cash funded. Approximately 41% of Fitch's U.S. toll roads are viewed as stronger and include Western Turnpike and Alligator Alley each with 0% VRD, no refinance risk and more than half of the remaining principal amortizes in the next 10 years.

Meanwhile, approximately 46% of the U.S. toll roads have a midrange assessment. These roads tend to have up to 20% VRD and/or some refinance risk, and nearly all of the toll roads assessed as midrange have in excess of \$1 billion in debt outstanding. A few examples of unique circumstances with more than 20% VRD but assessed as midrange include, the Illinois State Toll Highway Authority with 33% VRD and the Orlando Orange County Expressway Authority with 24% VRD. The VRD is swapped with highly rated swap counterparties and future debt is expected to be fixed rate and benefit from reserves. Oklahoma Turnpike has 28% VRD and is also assessed as midrange since more than 50% of its remaining principal amortizes in the next 10 years.

A very limited number of Fitch's rated U.S. toll roads have been assigned a weaker assessment on the debt structure attribute (14%). These roads either have more than 20% VRD exposure or have weak rate covenants and back-loaded amortization profiles. Some examples include Golden Gate Bridge, its debt is 100% commercial paper that is continuously rolled over; Louisiana Transportation Authority (LA1), total debt service grows 10% each year through 2030 when it reaches maximum annual debt service (MADS); and SJTCA, a debt service cliff occurs in 2025 when it increases by 90%, presenting an exposure to refinance risk due to its bullet-like debt characteristics.

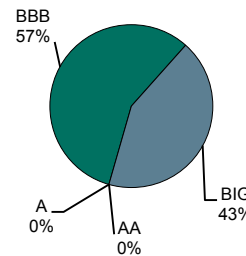
Debt Service: Overall Debt Burden

This attribute evaluates a toll road authority's ability to service its debt obligations and assesses financial flexibility in response to short- or medium-term adverse conditions

from macroeconomic cycles or temporary shifts in asset utilization. Depending on the asset type, debt structure and security package employed, Fitch considers some combination of informative financial metrics and ratios including leverage, net debt to cash flow available for debt service (CFADS), debt service coverage ratio (DSCR), debt per lane mile and MADS coverage. Leverage is assessed relative to the size of a toll road's earnings as well as the scale of operations. The debt/lane mile metric aligns with leverage since both provide a measure for a facility's debt burden. However, debt/lane mile tends to be higher for bridges since they are shorter facilities in length than expressways and turnpikes.

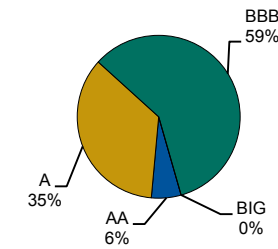
Fitch's review of the rated U.S. toll roads indicates a majority of toll roads, 46%, received stronger attribute assessments for this category. A midrange attribute assessment was assigned to 39% of the toll roads, while 16% of toll roads were assessed as weaker for this attribute. Assessments for the debt service attribute broken out by rating category are illustrated in the charts below.

Debt Service — Weaker
(% of Total = 15.9)



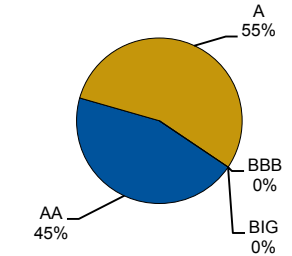
Source: Fitch.

Debt Service — Midrange
(% of Total = 38.6)



Source: Fitch.

Debt Service — Stronger
(% of Total = 45.5)



Source: Fitch.

Toll roads with stronger assessments for this attribute have favorable net debt ratios either through a low "gross" level of debt or high fund balances to offset high aggregate outstanding debt. A small number of toll roads retain internal liquidity that exceeds gross debt outstanding, resulting in a negative net debt/CFADS ratio. Examples of toll roads falling into this category include Western Turnpike (-0.7x) and Golden Gate Bridge (-7x). Other toll roads assessed as stronger can cover MADS by more than 1x and typically have less than 5x net debt/CFADS, which suggests the road does not need to rely on future growth to meet its obligations. Toll roads that meet this profile include: Ohio Turnpike (2.3x MADS coverage and 3.5x leverage) and Alligator Alley (3.6x and 1.7x).

In evaluating toll road leverage, Fitch looks at the projected evolution of the net debt/CFADS ratio. Fort Bend currently has low leverage of $-0.06x$, which is expected to migrate to $5.3x$ over the next few years after including future borrowing planned for expansion projects; the credit is still assessed strong including this projected evolution. Similarly, should a credit's debt service obligations decline quickly leading to a downward evolution of leverage within the forecast period, it will be taken into account when evaluating the debt service attribute.

Toll roads with weaker assessments for the volume attribute need to have a limited amount of leverage to achieve the same rating as those toll roads with a combination of stronger and midrange assessments for volume and debt service. Examples of toll roads with low leverage and a stronger debt service assessment, but a weaker volume assessment include the international border crossings, all rated 'A': Cameron County ($1.1x$ net debt/CFADS), McAllen ($2.9x$) and the Peace Bridge ($-3.2x$). Meanwhile the New Jersey Turnpike has a midrange debt service assessment with moderate leverage and DSCR of $6.6x$ and $1.7x$, respectively, and is also rated 'A' reflecting its strong volume assessment.

The metrics for roads with a weaker assessment for debt service represent high leverage, low MADS coverage and low DSCR. In the case of FETCA, SJTCA and the Dulles Greenway, leverage is high for the U.S. toll road sector at more than $17x$ and MADS coverage is weak ranging from $0.4x$ to $0.6x$.

Separately, dwindling resources at the federal level have lead state departments of transportation (DOTs) to question the reliability and sustainability of the role of the federal government in surface transportation long term. As such, some DOTs have turned to their state's toll road authorities to provide subsidies or transfer surplus revenues for nonsystem purposes. Some toll road authorities that provide subsidies for nonsystem purposes include the TBTA (MTA transit operations), the Golden Gate Bridge (transit operations), the HCTRA (County roads) and the Pennsylvania, New Jersey, and New Hampshire turnpikes. While the practice of providing subsidies provides some bondholder protection by ensuring higher debt service coverage ratios to allow for the transfers and are subordinate to all debt service requirements of the rated bonds, Fitch views these transfers negatively if they leave an authority with deferred maintenance and/or lower liquidity and a dependence on future borrowing to fund a large portion of its CIP.

Of the five key rating drivers, Fitch views the debt service driver as more susceptible to change since it is largely a function of management decisions.

Appendix D highlights several metrics that are used in evaluating debt service, including DCOH, leverage and coverage. When considering these metrics by rating category, higher rated credits show consistently better scores — higher coverage, lower leverage and higher liquidity — than lower rated credits. However, the overall metrics are relatively strong across U.S. rated toll roads, which supports the higher investment-grade ratings seen in this sector.

Managed Lane and Public Private Partnership Projects

Fitch rates various toll roads, including managed lane (ML) projects that are typically created to provide congestion relief and are more dependent on organic economic growth in the urban area, particularly employment. These projects are primarily influenced by general purpose lane volume and the ML toll rates. The 91 Express Lanes has been operating for more than a decade and essentially serves as a land bridge. It is located in Orange County, CA, but serves Riverside County residents, an area still recovering from the economic recession, with high unemployment rates. In addition, the peak period toll rates are among the highest in the nation. Thus, volume and price are assessed as midrange. The road is rated 'A', higher than all other ML and public private partnership (P3) projects, since leverage is low at less than $4x$ and additional parity borrowings are not permitted under the current documents. Therefore, the debt service attribute is assessed as stronger.

Meanwhile, the projects located in strong service areas with demonstrated congestion on the existing general purpose lanes achieved a stronger assessment for the volume attribute. These include LBJ Infrastructure (LBJ) and North Tarrant Express Mobility Partners (NTE) both located in Dallas and the 95 Express Lanes located in Northern VA. However, the projects carry a low investment-grade rating of 'BBB-' since either the price or debt service attribute was assessed as weaker with the other scoring midrange. The weak assessment either reflects unproven pricing power or high leverage. ML projects are subject to more volatility through economic cycles, which affects the price attribute more than the volume assessment.

Several Fitch-rated P3 projects either just opened or are still under construction and include: Elizabeth River Crossings (Midtown Tunnel in VA) and North Carolina Turnpike Authority. In addition, the Chesapeake Expressway (VA) is an operational road that is being combined with a project under construction and the city of Chesapeake will retain control of the entire system, once complete. These three roads achieved midrange assessments or higher for at least three of the five attributes.

Conclusion

The toll road rating criteria provides a structured analytical approach with a focus on five key rating drivers. Fitch conducted a detailed review of its rated U.S. toll roads to determine scores for each attribute assessment. Reviews of all toll roads are conducted at least once annually. As noted in the analysis above, the assessments in most categories were predominantly stronger or midrange, which is consistent with the generally strong credit characteristics and investment-grade rating levels seen for most toll road credits in the U.S.

Fitch will assign attribute assessments for each new toll road rating and will similarly monitor existing attribute assessments as part of its ongoing rating surveillance. Going forward, all five attribute assessments will be published in Fitch's rating action commentary for U.S. toll roads. To the extent an assessment adjustment is determined to be appropriate, Fitch will publish that change as part of its rating action commentary. In some cases, attribute assessment adjustments may lead to rating actions, depending on the underlying reasons for the change and the relative significance of the attribute being adjusted.

For a detailed description of the attribute drivers, see Appendix A; for attribute assessments by toll road, see Appendix C; and for key statistics by toll road, see Appendix D.

Appendix A: Global Key Rating Drivers for Toll Roads (Attribute Assessments)

	Revenue Risk: Volume	Revenue Risk: Price	Infrastructure Development/Renewal	Debt Structure	Debt Service and Counterparty Risk
Description	<ul style="list-style-type: none"> Resilience of traffic volumes to macroeconomic stress, competition, and other event risks. 	<ul style="list-style-type: none"> Demonstrated willingness and ability to increase tolls. Current toll rates relative to peers and distance to perceived revenue maximization point. Nature of any caps (statutory, contractual or political). 	<ul style="list-style-type: none"> Approach to the ongoing capital program and maintenance, including planning, funding, management. Adequacy and appropriateness of investment scope. 	<ul style="list-style-type: none"> Fixed-/variable-rate debt maturity profile, amortization profile, refinance risk, flow of funds, distribution test, and reserves. 	<ul style="list-style-type: none"> Debt burden relative to cash-flow generation. Liquidity, multiple liens of debt, and covenants. Exposure to project and financial counterparty risks.
Stronger	<ul style="list-style-type: none"> Proven resilient traffic base with relatively lower volatility. Typically includes facilities with near monopolistic characteristics (i.e. an essential road with a large commuter base, limited competing roads, or other modes of transportation). 	<ul style="list-style-type: none"> Legal or contractual flexibility to increase rates in excess of inflation, with minimal legislative or political interference. In practice, rates can be, and historically have been, increased with material flexibility. Demonstrated low elasticity. Low toll rates. 	<ul style="list-style-type: none"> Highly developed and detailed capital and maintenance plan with strong contract terms and project developers. Annual inspections with objective and quantitative measures. Plan partly funded by project cash flows. Concession framework provides for full recovery of expenditure via adjustment in toll rates. 	<ul style="list-style-type: none"> High percentage of fixed-rate debt with limited refinance risk, fully amortizing debt. Strong covenant package and reserves. 	<ul style="list-style-type: none"> Low leverage, with minimal expected issuance. High levels of liquidity. Counterparties rated higher than project debt with rating triggers. No dependence on growth.
Midrange	<ul style="list-style-type: none"> Proven traffic base with relatively moderate volatility. Typically includes facilities with a larger percentage of commercial or discretionary traffic; an essential road facing some degree of competition from competing roads or other modes of transportation. 	<ul style="list-style-type: none"> Legislative approval with demonstrated history of toll rate increases. Concession framework allows periodic rate increases that track inflation. Price elasticity of demand of toll increases is demonstrably low to moderate. Moderate toll rates. 	<ul style="list-style-type: none"> Moderately developed capital and maintenance plan with adequate contract terms and project developers. Concession framework provides for adequate recovery of expenditure via adjustment in toll rates 	<ul style="list-style-type: none"> Some variable-rate risk present. Moderate use of bullet maturities, some imbalance from swaps/ derivatives. Adequate covenant package and reserves. Some back-loading of debt. 	<ul style="list-style-type: none"> Moderate leverage, or low with expectation of sizable additional issuance. Moderate liquidity cushion. Adequately rated counterparties with weaker triggers. Some dependence on growth.
Weaker	<ul style="list-style-type: none"> Traffic with limited or no history; relatively high volatility. Typically includes facilities with a larger percentage of leisure or single purpose traffic; meaningful competition; or greenfield projects. 	<ul style="list-style-type: none"> Legislative approval with limited history of toll rate increases. Concession framework limits periodic rate increases to less than inflation. Untested or demonstrably high price elasticity of demand. High toll rates. 	<ul style="list-style-type: none"> Weak planning mechanisms, history of deferred maintenance and weak contract terms and developers. Plan predominantly funded by additional debt. Concession framework doesn't provide for a significant recovery of expenditure via adjustment in toll rates. 	<ul style="list-style-type: none"> High percentage of variable-rate debt, significant use of bullet or back loaded maturity structure. Use of derivatives resulting in imbalanced exposure. Loose covenant package and reserves. 	<ul style="list-style-type: none"> High current leverage and/or high expected debt burden. Marginal liquidity cushion. Lower rated counterparties with weak or no triggers. High dependence on sustained traffic and revenue growth to meet financial obligations.
Relevant Metrics	<ul style="list-style-type: none"> Local and regional economic data. Type of corridor. Traffic volume volatility over time. Traffic composition. Competing roads/alternate transportation modes. 	<ul style="list-style-type: none"> Toll rate per kilometer/mile. Value of time. Elasticity. Toll rate relative to any cap. Lock-up provisions. 	<ul style="list-style-type: none"> Asset quality. CIP program specifics. 	<ul style="list-style-type: none"> Percentage of fixed-/ variable-rate debt. Percentage subject to refinance risk. Rate covenant. Level of reserves. Distribution test. Amortizing debt or bullets. 	<ul style="list-style-type: none"> Net Debt/EBITDA (CFADS). Debt/lane mile. Additional bonds test. Cash on hand. DSCR/LLCR. MADS coverage. Credit quality of counterparty and ease of replacement.

CIP – Capital improvement program. CFADS – Cash flow available for debt service. DSCR – Debt service reserve fund. LLCR – Loan life coverage ratio. MADS – Maximum annual debt service.
Source: Fitch.

Appendix B: Definitions

Total DSCR: Total operating revenues minus total operating expenses net of depreciation, divided by the combined Fitch-rated senior/subordinate lien debt service.

CFADS: Cash flow available for debt service (i.e. pledged net revenues).

Net Debt/CFADS (Leverage): Gross debt less unrestricted cash balances and debt reserve funds divided by CFADS.

Coverage of MADS: CFADS divided by the maximum annual debt service payable for the combined Fitch-rated senior/subordinate lien.

Average Toll: Annual toll revenues divided by annual toll transactions.

Appendix C: Toll Road Attribute Assessments

Toll Road	Rating	Outlook	Revenue Risk: Volume	Revenue Risk: Price	Infrastructure Development/Renewal	Debt Structure	Debt Service/Counterparty Risk
AA Rating							
Ohio Turnpike Commission	AA	Stable	Stronger	Stronger	Midrange	Stronger	Stronger
Harris County Toll Road Authority	AA	Stable	Stronger	Stronger	Stronger	Midrange	Stronger
AA- Rating							
Florida DOT, Florida Turnpike Enterprise	AA-	Stable	Stronger	Stronger	Stronger	Stronger	Stronger
Maryland Transportation Authority	AA-	Stable	Stronger	Stronger	Midrange	Stronger	Stronger
Massachusetts Turnpike Authority — Western Turnpike	AA-	Stable	Stronger	Midrange	Midrange	Stronger	Stronger
Oklahoma Turnpike Authority	AA-	Stable	Stronger	Stronger	Stronger	Midrange	Stronger
Maine Turnpike Authority (Sr. and Special Obligations)	AA-/A-	Stable	Midrange	Stronger	Stronger	Stronger	Stronger
Triborough Bridge & Tunnel Authority (Senior and Subordinate)	AA-/A+	Stable	Stronger	Stronger	Midrange	Midrange	Stronger
Bay Area Toll Authority	AA-	Stable	Stronger	Stronger	Stronger	Midrange	Midrange
Illinois State Toll Highway Authority	AA-	Stable	Stronger	Midrange	Midrange	Midrange	Stronger
A+ Rating							
Massachusetts Turnpike Authority — Metro Highway System Sr. and Jr. Bonds	A+/AA ^a	Stable	Stronger	Midrange	Midrange	Midrange	Midrange
Fort Bend Toll Road Authority	A+	Stable	Midrange	Stronger	Stronger	Stronger	Stronger
Pennsylvania Turnpike Commission (Sr. lien and Sub)	A+/A-	Stable	Stronger	Midrange	Midrange	Midrange	Midrange
Alligator Alley (Florida)	A+	Stable	Midrange	Stronger	Stronger	Stronger	Stronger
Golden Gate Bridge Highway and Transportation District	A+ ^b	Stable	Midrange	Stronger	Midrange	Weaker	Stronger
New Hampshire Turnpike System	A+	Stable	Stronger	Midrange	Midrange	Stronger	Stronger
Laredo International Toll Bridge (TX)	A+	Stable	Midrange	Midrange	Midrange	Stronger	Stronger
A Rating							
Cameron County TX International Toll Bridge	A	Stable	Weaker	Midrange	Midrange	Stronger	Stronger
McAllen, TX International Toll Bridge	A	Stable	Weaker	Midrange	Midrange	Stronger	Stronger
Rhode Island Bridge and Turnpike Authority	A	Stable	Midrange	Midrange	Weaker	Stronger	Midrange
New Jersey Turnpike Authority	A	Stable	Stronger	Midrange	Midrange	Midrange	Midrange
Orange County Transportation Authority (SR 91 Express Lanes)	A	Stable	Midrange	Midrange	Stronger	Weaker	Stronger
Orlando-Orange County Expressway Authority	A	Stable	Stronger	Midrange	Stronger	Midrange	Midrange
Buffalo Fort Erie Bridge	A	Stable	Weaker	Midrange	Midrange	Stronger	Stronger
A- Rating							
Miami-Dade County Expressway Authority	A-	Stable	Stronger	Midrange	Stronger	Midrange	Midrange
Richmond Metropolitan Authority	A-	Positive	Midrange	Midrange	Stronger	Stronger	Stronger
Chesapeake Bay Bridge & Tunnel Authority Junior Bonds	A- ^c	Stable	Midrange	Midrange	Stronger	Weaker	Stronger
BBB+ Rating							
Mid-Bay Bridge Authority (Sr. and Springing Lien Bonds)	BBB+/BBB	Stable	Weaker	Midrange	Midrange	Stronger	Midrange
Texas Turnpike Authority	BBB+	Stable	Midrange	Midrange	Stronger	Midrange	Midrange
South Jersey Transportation Authority (Senior and Subordinate Bonds)	BBB+/BBB-	Stable	Weaker	Midrange	Stronger	Midrange	Midrange

^aThe junior lien rating is provided by Fitch's U.S. Public Finance States Group. ^bThe Golden Gate Bridge District has only CP outstanding, this is an implied Fitch 'A+' rating. ^cThere is no debt outstanding on the senior lien; the rating is for the junior lien. ^dThe senior lien rating is provided by Fitch's U.S. Public Finance States Group. *Continued on next page.*

Source: Fitch.

Appendix C: Toll Road Attribute Assessments (Continued)

Toll Road	Rating	Outlook	Revenue Risk: Volume	Revenue Risk: Price	Infrastructure Development/Renewal	Debt Structure	Debt Service/Counterparty Risk
BBB Rating							
Chesapeake Expressway (VA)	BBB	Stable	Midrange	Midrange	Stronger	Midrange	Midrange
BBB- Rating							
E-470 Public Highway Authority	BBB-	Stable	Midrange	Midrange	Stronger	Midrange	Midrange
Foothill/Eastern Transportation Corridor Agency	BBB-	Negative	Midrange	Weaker	Stronger	Midrange	Weaker
Elizabeth River Crossings (and TIFIA)	BBB-/BBB-	Stable	Midrange	Midrange	Stronger	Midrange	Midrange
North Carolina Turnpike Authority (Triangle Expressway TIFIA) — Senior and Sub. TIFIA	BBB-/BBB-	Stable	Midrange	Midrange	Stronger	Stronger	Weaker
North Tarrant Express Mobility Partners (Sr. and Subordinate TIFIA Obligations)	BBB-/BBB-	Stable	Stronger	Midrange	Stronger	Stronger	Weaker
LBJ Infrastructure Group LLC	BBB-	Stable	Stronger	Midrange	Stronger	Stronger	Weaker
95 Express Lanes (VA)	BBB-/BBB-	Stable	Stronger	Weaker	Stronger	Midrange	Midrange
Below Investment-Grade Senior Lien							
Toll Road Investors Partnership II, LP	BB+	Stable	Midrange	Weaker	Midrange	Midrange	Weaker
San Joaquin Hills Transportation Corridor Agency	BB	Stable	Midrange	Weaker	Stronger	Weaker	Weaker
Louisiana Transportation Authority (and TIFIA)	BBB ^d /CCC		Weaker	Midrange	Midrange	Weaker	Weaker

^aThe junior lien rating is provided by Fitch's U.S. Public Finance States Group. ^bThe Golden Gate Bridge District has only CP outstanding, this is an implied Fitch 'A+' rating. ^cThere is no debt outstanding on the senior lien; the rating is for the junior lien. ^dThe senior lien rating is provided by Fitch's U.S. Public Finance States Group.
Source: Fitch.

Appendix D: Toll Road Statistics — Fiscal 2012

Toll Road	Rating (Liens)	Outlook	Toll Transactions (000)	Toll Revenue (\$000)	Avg. Toll (\$)	Total Debt Outstanding (\$000)	Total MADS Coverage (x)	Total Leverage: Net Debt/CFADS (x)	Total Debt/Lane Mile (\$000)	Total DSCR (x)
AA Rating										
Ohio Turnpike Commission	AA	Stable	49,804	252,544	5.07	566,290	2.29	3.48	412	2.67
Harris County Toll Road Authority	AA	Stable	408,307	481,707	1.18	2,066,780	2.75	1.75	3,275	3.05
AA- Rating										
Florida DOT, Florida Turnpike Enterprise	AA-	Stable	664,279	608,812	0.92	2,856,935	1.92	4.12	1,293	1.89
Maryland Transportation Authority	AA-	Stable	126,870	389,562	3.07	2,322,000	1.60	6.93	3,909	2.74
Massachusetts Turnpike Authority — Western Turnpike	AA-	Stable	105,925	113,834	1.07	90,110	2.96	(0.68)	88	2.96
Oklahoma Turnpike Authority	AA-	Stable	155,284	233,497	1.50	1,085,260	2.13	4.01	454	2.19
Maine Turnpike Authority (Sr. and Special Obligations)	AA-/A-	Stable	73,444	104,500	1.42	438,695	1.19	5.26	839	2.32
Triborough Bridge & Tunnel Authority (Senior and Subordinate)	AA-/A+	Stable	282,647	1,490,982	5.28	8,510,735	1.92	7.22	58,293	1.90
Bay Area Toll Authority	AA-	Stable	121,139	625,863	5.17	5,519,440	1.47	8.67	31,148	1.53
Illinois State Toll Highway Authority	AA-	Stable	803,780	922,390	1.15	3,963,725	2.35	4.39	1,936	2.84
A+ Rating										
Massachusetts Turnpike Authority - Metro Hghwy System Sr. & Jr. Bonds	A+/AA ^a	Stable	91,296	181,826	1.99	1,187,798	—	4.56	5,303	54.32
Fort Bend Toll Road Authority	A+	Stable	24,088	19,325	0.80	30,775	8.12	(0.06)	592	53.81
Pennsylvania Turnpike Commission (Sr. lien and Sub)	A+/A-	Stable	189,087	780,798	4.13	6,735,805	1.01	11.72	2,546	1.78
Alligator Alley (Florida)	A+	Stable	7,524	19,647	2.61	35,805	3.61	1.68	115	3.61
Golden Gate Bridge Highway & Transportation District	A+ ^b	Stable	19,417	102,814	5.30	61,000	—	(7.04)	5,169	199.22
New Hampshire Turnpike System	A+	Stable	108,719	119,939	1.10	343,791	1.97	3.23	535	2.35
Laredo International Toll Bridge (TX)	A+	Stable	9,149	44,468	4.86	50,200	5.07	0.99	1,793	5.13
A Rating										
Cameron County TX International Toll Bridge	A	Stable	5,013	15,137	3.02	20,205	3.51	1.07	3,368	3.51
McAllen, TX International Toll Bridge	A	Stable	5,352	12,808	2.39	36,795	3.89	2.94	2,706	3.90
Rhode Island Bridge & Turnpike Authority	A	Stable	10,132	18,824	1.86	66,805	1.28	3.14	6,448	2.08
New Jersey Turnpike Authority	A	Stable	589,298	1,393,680	2.36	8,101,202	1.41	6.56	3,376	1.72
Orange County Transportation Authority (SR 91 Express Lanes)	A	Stable	11,944	32,103	2.69	155,460	2.14	3.73	3,887	2.39
Orlando-Orange County Expressway Authority	A	Stable	302,441	262,608	0.87	2,629,210	1.14	10.19	3,799	1.51
Buffalo Fort Erie Bridge	A	Stable	6,043	22,491	3.72	38,290	5.04	(3.17)	18,825	5.05
A- Rating										
Miami-Dade County Expressway Authority	A-	Stable	232,655	122,510	0.53	1,241,655	1.14	10.30	5,652	1.37
Richmond Metropolitan Authority	A-	Positive	56,231	35,681	0.63	183,470	1.55	5.71	3,677	1.93
Chesapeake Bay Bridge & Tunnel Authority Junior Bonds	A- ^c	Stable	3,517	44,850	12.75	108,455	2.38	(3.13)	1,506	3.38
BBB+ Rating										
Mid-Bay Bridge Authority (Sr. and Springing Lien Bonds)	BBB+/BBB	Stable	6,543	15,797	2.41	254,845	0.67	13.06	12,135	1.73
Texas Turnpike Authority	BBB+	Stable	90,032	75,695	0.84	1,296,368	0.18	9.91	3,177	0.80
South Jersey Transportation Authority (Senior and Subordinate Bonds)	BBB+/BBB-	Stable	52,997	77,593	1.46	464,215	1.44	8.40	1,813	1.45

^aThe junior lien rating is provided by Fitch's U.S. Public Finance States Group. ^bThe Golden Gate Bridge District has only CP outstanding, this is an implied Fitch 'A+' rating. ^cThere is no debt outstanding on the senior lien; the rating is for the junior lien. ^dThe senior lien rating is provided by Fitch's U.S. Public Finance States Group. If Fitch's Global Infrastructure and Project Finance group rates the senior lien only, metrics represent senior lien. *Continued on next page.*

Source: Fitch.

Appendix D: Toll Road Statistics — Fiscal 2012 (Continued)

Toll Road	Rating (Liens)	Outlook	Toll Transactions (000)	Toll Revenue (\$000)	Avg. Toll (\$)	Total Debt Outstanding (\$000)	Total MADS Coverage (x)	Total Leverage: Net Debt/CFADS (x)	Total Debt/Lane Mile (\$000)	Total DSCR (x)
BBB- Rating										
E-470 Public Highway Authority	BBB-	Stable	56,966	116,745	\$2.05	1,586,423	0.80	11.79	5,101	1.46
Foothill/Eastern Transportation Corridor Agency	BBB-	Negative	56,173	107,150	\$1.91	2,372,023	0.36	18.07	8,884	1.17
Below Investment Grade										
Toll Road Investors Partnership II, LP	BB+	Stable	16,946	66,632	\$3.93	1,013,033	0.61	17.83	7,134	1.16
San Joaquin Hills Transportation Corridor Agency	BB	Stable	25,425	92,972	\$3.66	2,103,164	0.36	19.13	13,746	1.07
Louisiana Transportation Authority (and TIFIA) ^c	BBB ^d /CCC		1,236	3,704	\$3.00	200,741	0.16	56.88	14,339	1.10

^aThe junior lien rating is provided by Fitch's U.S. Public Finance States Group. ^bThe Golden Gate Bridge District has only CP outstanding, this is an implied Fitch 'A+' rating. ^cThere is no debt outstanding on the senior lien; the rating is for the junior lien. ^dThe senior lien rating is provided by Fitch's U.S. Public Finance States Group. If Fitch's Global Infrastructure and Project Finance group rates the senior lien only, metrics represent senior lien.
Source: Fitch.

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