FitchRatings

Peer Review of U.S. Managed Lanes
Attribute Assessments and Ratings

March 2017

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Peer Review of U.S. Managed Lanes (Attribute Assessments and Ratings) (February 2016)
U.S. Managed Lanes: Sector Update (June 2015)
U.S. Managed Lanes: Empirical Data Steers Credit Analysis (November 2013)

Related Criteria

Rating Criteria for Toll Roads, Bridges and Tunnels (August 2016)
Rating Criteria for Infrastructure and Project Finance (July 2016)

Summary

- The 2017 Peer Review of U.S. Managed Lanes (ML) provides an annual snapshot of the Fitch-rated U.S. ML portfolio, including key rating factors (KRFs) for each rated project.
- No rating changes were made as part of this peer review; however, several KRFs were revised to ensure that each individual rating factor assessment is consistent and comparable with the applicable criteria and with the rest of the U.S. ML portfolio. Any such changes are specifically addressed in this report.
- ML projects included in this report are financed with debt primarily secured by ML net revenues. Fitch Ratings currently maintains ratings on 11 debt-financed ML projects in the U.S., four of which are operated by public sector entities and seven are privately operated under long-term concession agreements. Of these 11 projects, one has been operational for nearly 20 years; five are currently in various stages of ramp up, all having opened within the last five years; and five are under construction. Fitch maintains private ratings on one ML project.
- MLs are a subset of the toll road sector and are rated by Fitch under *Rating Criteria for Toll Roads, Bridges and Tunnels* (August 2016) with the ML-specific elements laid out in *Appendix B* of the criteria. As part of its criteria, Fitch focuses on six KRFs: Completion Risk; Revenue Risk – Volume; Revenue Risk – Price; Infrastructure Development and Renewal; Debt Structure; and Debt Service Risk. Between them, they address the main qualitative and quantitative aspects of the operating and financial profiles for most projects and reflect an assessment of both past performance and future expectations.
- The report focuses on working examples of the application of the toll road criteria to Fitch-rated ML projects, providing examples of what constitutes a stronger, midrange or weaker assessment for each KRF. These examples include certain unique features of MLs assessed as part of revenue risk factors under Revenue Risk – Volume, as set out in the *Appendix B* of the toll road criteria.

Key Rating Factors Overview

Fitch's rating criteria identifies six KRFs implicit in all ML ratings:

- Completion: risk related to construction of the ML (if relevant).
- Volume: traffic demand characteristics, firstly considering the volume characteristics of the corridor as a whole (including free access general purpose lanes [GPLs]), before separately considering aspects of the MLs (including historical demand, price elasticity of users, access policy and configuration).

- Price: the legal and political flexibility to increase tolls if required.
- Infrastructure development and renewal: the approach to maintaining and improving its infrastructure base.
- Debt structure: financial risk associated with the capital structure.
- Debt service: the level of financial flexibility.

For the first five KRFs, Fitch assigns an assessment of either "stronger," "midrange," or "weaker." The sixth KRF, debt service, considers debt service coverage, leverage and liquidity in the context of the overall risk profile determined by review of the other KRFs.

Managed Lanes: Key Rating Factors
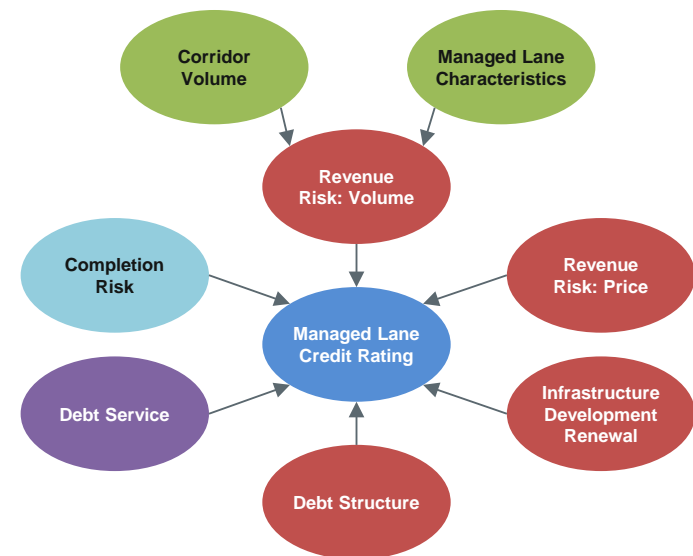
Source: Fitch Ratings.

Comparability of Ratings

ML projects face some unique challenges compared with standard toll roads, so a more diverse range of attributes is taken into consideration as part of Fitch's revenue risk analysis under the volume KRF described in detail in this report. The report also seeks to provide an indication of the relative importance of the rating factors, explaining

conditions that may lead to one KRF outweighing others, resulting in a higher or lower rating than may otherwise be expected.

- KRF attribute assessments help frame ML credit ratings, providing a standardized approach for comparing U.S. MLs and other infrastructure assets across Fitch's global portfolio.
- Particular emphasis is also placed on key features of the ML project's debt structure including flexibility and liquidity, which are especially important given the inherent volatility and difficulty in forecasting. All rated transactions benefit from structural flexibility providing added protection against weaker ramp up.
- Most ML projects are rated in the 'BBB' category reflecting the leveraged structures employed. Given the relatively acute competition risks faced by ML facilities, it is highly unlikely that ratings above the 'A' category would be assigned, regardless of leverage or any other KRF assessments.
- Ratings below investment grade typically reflect projects with high completion risks, or those experiencing sustained underperformance and/or are significantly over leveraged, in Fitch's view.

Rating Activity

Since the 2016 publication of the *Peer Review of U.S. Managed Lanes (Attribute Assessments and Ratings)*, Fitch made one Outlook revision with no rating actions on credits included in this peer review.

- In 2016, two new toll road credits were added to the rated portfolio: Blueridge Transportation Group, LLC (SH 288 MLs) near Houston and Texas Department of Transportation (TxDOT, IH 35E MLs) in the Dallas-Fort Worth region.
- In first-quarter 2017, Fitch assigned expected ratings to the debt issued by Colorado High Performance Transportation Enterprise (HPTE) for the C-470 Express Toll Lane (C-470) project in the southern Denver area. Final ratings are expected to be assigned at financial close anticipated later this spring.
- The rating Outlook for I-95 Express Lanes LLC in Northern Virginia (95 Express) was revised to Positive from Stable on account of performance being ahead of expectations. Positive rating movement will hinge on continued strong financial performance and additional clarity on potential debt funding for the ML extension.
- All other Fitch-rated ML facilities are currently subject to Stable Outlooks. Rating changes in the near term are generally unlikely as most projects are in various stages of construction or ramp up. In the case of California's Orange County

Managed Lane Ratings
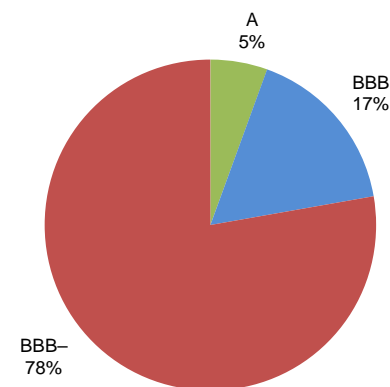
Note: Publicly rated managed lane facilities. Includes expected ratings for the C-470 project's debt.
Source: Fitch Ratings.

Transportation Authority's (OCTA) SR-91 ML senior bonds, to the extent the effects from the introduction of the Riverside County Transportation Commission in California (RCTC, Riverside County SR-91 MLs) connecting MLs are not adverse to the OCTA's SR 91 ML traffic and revenue profile, preserving similarly high coverage levels, a higher rating may be warranted.

- Positive operating performance trends developed for several facilities over the last several years; positive rating movement will hinge on continuation of strong growth trends through the end of ramp up and a sustained stable growth post ramp up.

Summary of Changes to Attribute Assessments

Fitch revised a total of three KRF attribute assessments since the last peer review was published in February 2016. This includes the attribute assessment change for one of the new credits added to the portfolio (SH 288). None of the attribute assessment changes directly resulted in a rating or Outlook revision.

- Following completion of construction on Plenary Roads Denver, LLC (PRD, U.S. 36 Phases I, II and I-25 MLs) in Denver, the Completion Risk assessment is no longer applicable.
- RCTC saw its Completion Risk assessment revised to stronger from midrange reflecting the advance stage of the construction schedule.

- SH 288's Debt Structure assessment was consolidated into a single midrange score from two separate midrange scores previously assigned for each lien of debt (senior and Transportation Infrastructure Finance and Innovation Act [TIFIA] loan). This brings it in line with Debt Structure assessments for projects with similar "springing lien" TIFIA loan structures under which the loan ranks subordinate to senior debt unless a bankruptcy event occurs, after which it springs to parity with the senior debt.

Performance Highlights

Projects in Construction

SH 288, IH 35E, RCTC and I-77 Mobility Partners LLC (Charlotte, NC) are currently in various phases of construction. All projects have ratings in the 'BBB' category on their respective senior lien bonds and TIFIA loans reflecting relatively high current leverage and construction that has progressed, for the most part, in line with expectations.

- RCTC's SR 91 construction is nearing completion, currently expected in March 2017 and broadly on schedule and on budget.
- IH 35E ML construction is expected to reach completion in May 2017.
- I-77 construction commenced in November 2015 with scheduled completion in December 2018.
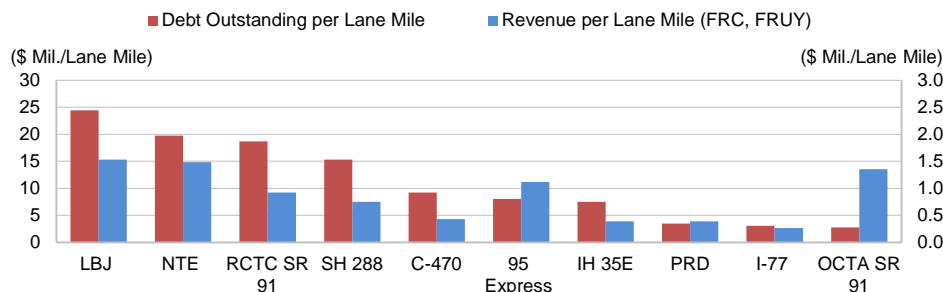- SH 288 ML construction is expected to end in July 2019.

Projects in Operation

Fitch also rates the respective senior lien bonds and TIFIA loans of four recently opened private sector projects: PRD; LBJ Infrastructure Group, LLC in Dallas (LBJ, I-635 MLs); North Tarrant Express Mobility Partners LLC in Fort Worth, TX (NTE, Segments 1 and 2); and I-95 Express Lanes LLC in Northern Virginia (95 Express). Low investment-grade ratings for these projects reflect the uncertainty around ramp up and their highly leveraged, back-loaded capital structures.

- Construction activity on the final segment of PRD (phase 2) concluded in January 2016; toll collection commenced in late March 2016. In Fitch's view, it is still too early in the ramp up stage to draw any conclusions about traffic and revenue trends, as it will be important to monitor the transition to high-occupancy vehicles with three or more passengers (HOV3+) from the HOV2+ policy for the MLs (commenced in January 2017), and to evaluate how the transition affects the project.
- Both NTE and 95 Express projects opened to traffic in late 2014, and early ML ramp up performance seem, so far, to support initial assumptions for both projects.

- o Construction on 95 Express was completed on schedule in December 2014. Total revenues of approximately $78 million reported for the 2016 calendar year compared favorably with the sponsor's original forecast at financing for the second full operating year of $76 million and Fitch's more conservative rating case assumptions.

- o On NTE, construction was completed more than eight months ahead of schedule in June 2015 and the project benefited from an additional six months of operations in 2015. In the second full calendar year of operations, total revenues were approximately $73 million, which compared favorably with the original forecast at financing of about $69 million for 2016.

- LBJ completed construction of its final segment (segment two) in September 2015 and the road is now fully operational (sections 3 and 1 opened on schedule in December 2013 and July 2014, respectively).

- o Total revenues of approximately $75 million in the first full year of operations underperformed Fitch's rating case. While it is too early to fully estimate ramp up through 2017, growth is expected to continue given Fitch's observations on other ML projects. To reach Fitch's rating case of $87 million in 2017, revenues would need to increase by about 16%, which appear reasonable and achievable for a second year of ramp up.

- Fitch has one privately rated ML project in operations. Despite initial underperformance, traffic and revenue materially improved through a longer and robust ramp-up period.
- Finally, Fitch rates OCTA SR-91 ML senior bonds in the 'A' category, reflecting the project's low leverage profile and long operating history that, although somewhat volatile as would be expected, demonstrated consistent and well-understood revenue-generating capability.
- The chart below provides an illustration of the ability of a ML project to support its debt obligations. The debt is scaled against the fully ramped-up year's gross revenues under Fitch's rating case. Projects with higher debt per lane mile are expected to generate higher revenues to support their debt obligations, as illustrated in the chart. For example, LBJ's more than $24 million in debt per lane mile is higher than other projects in Fitch's portfolio. At the same time, LBJ is viewed by Fitch as a stronger asset that is more likely to have the ability to produce more revenue per lane mile to support its debt.

Debt and Fitch Rating Case Revenue per Lane Mile
(Fully Ramped-Up Year)

Note: OCTA fully ramped-up year revenues are based on fiscal 2016 actual revenues since there is no ramp up.
95 Express revenues are based on calendar-year 2016 estimates assuming rampup is complete.
Source: Fitch Ratings.

Conclusion

Fitch's criteria for toll roads provide a structured, analytical approach with a focus on key rating drivers. Fitch conducted a detailed portfolio review of its rated U.S. MLs to determine attribute assessments for each category. Reviews of all MLs are conducted at least once annually. Fitch will assign attribute assessments for each new ML facility rating and will similarly monitor existing attribute assessments as part of its ongoing rating surveillance. Attribute assessments are published in Fitch's rating action commentary for each ML project. To the extent an adjustment to an existing assessment is determined to be appropriate, Fitch likewise publishes the 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 *Attribute Assessment* section; for attribute assessments by ML facility, see *Appendix C*, and for key statistics, see *Appendix D.*

Attribute Assessments

Completion Risk: Complexity, Contractor Strength and Security Package Provisions

The Completion Risk assessment is determined based on mostly relatively objective considerations, such as the financial strength of the contractor, its experience with

similar projects, analysis of protections included in construction contract terms and the performance security package.

- Of the facilities included in this peer study that are currently in various stages of construction, SH 288 and I-77 both have completion risk assessments of midrange, primarily reflecting the financial strength of most contractors in the field combined with fixed-price, date certain terms and supportive performance security, as well as the relatively straightforward construction. Major construction on the RCTC and IH 35E is scheduled to conclude within the next few months reflecting the stronger assessments for both projects.

- It would be unlikely that a project facing completion risk would be able to achieve an investment-grade rating with a weaker completion risk attribute assessment.

Revenue Risk Overview

As outlined in Fitch's toll roads criteria, Revenue Risk – Volume and Revenue Risk – Price are the two KRFs that generally have the most direct influence on operating toll road ratings. In the case of ML projects, the inherent volatility and uncertainty around traffic and revenue levels make a careful understanding of these risks particularly important.

Consistent with its broader toll roads portfolio, toll road revenue risk is determined through a combination of volume and price assessments. However, although traffic demand in the corridor as a whole may be fairly predictable and its analysis is similar to conventional toll roads, ML traffic demand and revenue tend to be much more volatile than for other toll road types, given acute competition they face from adjacent free lanes.

Some of the unique characteristics of ML projects, including lane configuration, toll-setting mechanisms and free-access policies, have meaningful implications on potential revenue generation for ML projects. In order to take into account these unique features and to facilitate a tailored approach for analyzing each facet relative to peers, the appendix to the toll roads criteria was included to evaluate the two separate components of the Revenue Risk – Volume KRF relevant to ML corridor volume and characteristics.

- For each rated ML facility, Fitch assessed the role of the corridor in the relevant regional transportation network and certain factors that describe the strength of the MLs within the applicable corridor. Fitch assigned individual attribute assessments of stronger, midrange and weaker to each of the subcomponents of volume, which helped it arrive at the project's overall Revenue Risk – Volume assessments.

- While the corridor assessment has a high influence on the overall volume assessment as the demand for a ML stems from the corridor it serves, in certain instances, ML characteristics may drive the overall volume assessment.

The report also lays out conditions that may lead to one of the three assessments for the second revenue risk KRF: Revenue Risk – Price. Together, Revenue Risk – Volume and Revenue Risk – Price assessments represent the franchise strength of a given project.

Revenue Risk – Volume

Corridor Volume: Traffic Base, Service Area and Competition

When analyzing ML projects, Fitch analyzes the underlying traffic demand for the corridor as a whole and the historic volatility of such demand over time. It considers factors such as the nature of the area the road serves and its role in the wider regional transportation network, the level of competition it faces, regional economic and demographic trends, user travel/origin and destination patterns, and carpooling activity.

MLs are typically constructed along corridors that have strong traffic demand characteristics reflecting dominant positions in servicing commuter populations in large, important and growing urban areas.

The corridor volume on these road facilities, unlike the MLs themselves, would typically be expected to demonstrate little volatility in traffic demand over time, with relatively quick recoveries observed after any cyclical shocks. The majority of these facilities have a mix of stronger and midrange corridor assessments, reflecting the importance of their corridors in their respective regional transportation networks.

- LBJ is viewed as having a stronger corridor assessment due to its location on a highly congested ring road just north of Dallas with a resilient and diverse traffic base and heavy levels of congestion throughout the day. NTE and 95 Express also have stronger corridor characteristics as both serve resilient service areas with high wealth levels and limited viable alternatives for commuters, with severe congestion during peak and peak-shoulder periods.
- While SR-91 (both OCTA and RCTC segments) exhibits some midrange corridor traits, with moderate softening during the most recent recession and lower income levels in its primary Riverside County service area compared with those in neighboring counties, a stronger corridor volume assessment is ultimately supported by its distinct "land-bridge" configuration with no real alternatives, making it an essential link between Orange and Riverside Counties.

- Fitch's midrange corridor volume assessments for both the I-77 and the PRD projects reflects some historical volatility and moderate dependence on suburban development that is, in the case of both corridors, partially mitigated by the respective areas' diverse employment bases and strong wealth levels.
- SH 288 corridor volume assessment of midrange reflects the project's strategic location in a growing commuter corridor with some dependence on further population and employment growth, particularly in Brazoria County. The local economy has some concentration in the oil and gas sector, which historically contributed to a considerable share of the region's economic growth, although Harris County saw increased diversification in employment over the years.
- IH 35E MLs benefits from its strategic location in a congested commuting corridor serving the Dallas-Fort Worth Metropolitan area. While the MSA is robust with strong socioeconomic factors, moderate corridor traffic base volatility and some reliance on suburban growth, particularly the northern section of the corridor supports the midrange assessment.
- Corridors with a large presence of commercial traffic may incentivize a higher shift of passenger traffic and possibly truck traffic, where permitted, to the MLs. However, evidence of that is still very limited and commercial traffic tends to be more volatile in general. Fitch will review historical traffic volatility to assess resiliency of truck traffic demand in the corridor. While corridors that are part of the North American Free Trade Agreement (NAFTA) routes typically carry high number of trucks, given the current political environment, these corridors have a heighted exposure to any material changes in federal trade policies.
- In Fitch's view, a weaker corridor assessment would imply significant doubt as to the road's ability to generate the consistent levels of congestion needed to create pricing power and would likely constrain resulting ratings to the sub-investment-grade level given the correlation between the underlying corridor characteristics and the degree of essentiality of the MLs, unless leverage is minimal.

ML Characteristics: Demand, Elasticity, Access Policy and Configuration

The second component of the Revenue Risk – Volume KRF, ML characteristics, addresses ramp up risk and the degree of volatility of the ML traffic base, the effects of

lane configuration, capacity enhancements, time savings, average trip lengths, speed advantage, the ability to capture tolled traffic and price elasticity of demand to toll rate changes. ML projects tend to display midrange or weaker traffic demand profiles, reflecting the acute competition they, by definition, face.

Historical Demand and Price Elasticity

- Rate-making authority may be constrained if price elasticity of road users in a given corridor is considered to be high, implying limited room for further toll increases without ultimately harming revenue. Even though price elasticity of demand has not been adequately tested for the various tolling methodologies in use, Fitch generally assumes that private operators will raise rates to maximize revenues, implying that they are unlikely to have any flexibility to raise rates to mitigate the effect of economic shocks, while public sector operators may have more of this flexibility in the peak-shoulder and inter-peak periods if tolls are set under a throughput maximization policy.
- The only rated project with meaningful performance history is OCTA's SR-91 MLs, supporting an ML characteristics assessment of midrange. The assessment reflects the expected relatively high level of volatility through the most recent economic recession, which was further exacerbated by travel time improvements on the GPLs resulting from free-lane capacity expansion. Nevertheless, volume and toll rates recovered well with traffic and revenue experiencing a CAGR between the first fully ramped-up year in 1998 and 2016 of approximately 2.3% and 6%, respectively.
- Currently, all other Fitch-rated projects have weaker ML characteristics assessments as these are either in construction or in the very early stages of ramp up and, therefore, ML volatility for these projects is still uncertain. Similarly, the elasticity of demand for toll increases has not been adequately tested as of yet. While some of the projects exhibit midrange individual ML characteristics (described in more detail below), these are outweighed by the lack of demand history, unproven ramp up and untested price elasticity of demand, resulting in a weaker ML characteristics assessment. The assessments could migrate upwards post-ramp up and once a level of demand is demonstrated through an economic cycle.

Congestion

- Facilities with consistent, demonstrated, acute congestion over extended periods during the day beyond just the peak hours (heavy two-directional peaks, peak-

shoulder and inter-peak periods), as evidenced by high density levels and low speeds in the GPLs and resulting in high capture rates, are viewed as having the highest degree of congestion. Conversely, low levels of congestion even in the peak periods and minimal capture rates would be assessed as weaker.

- o One example on the weaker end of the spectrum is I-77 where excess capacity in parts of the project corridor leads to a relatively narrow revenue-generating profile. In Fitch's view, the I-77 ML project's ability to generate significant revenue will initially be driven largely by the identified bottlenecks in the central and northern sections until congestion in the corridor increases as the service area population grows over forthcoming years. Similarly, PRD ML revenue generation is expected from narrow peak windows of meaningful congestion on part of the project's facilities only.

- o While RCTC's SR-91 MLs are expected to benefit from similar commuting patterns as OCTA, congestion in the corridor may be somewhat alleviated with the addition of a free GPL per direction.

- o Initial free capacity expansion on IH 35E ML project segment, with one additional GPL per direction, may reduce traffic pressures in peaks.

- Corresponding to congestion levels, highest pricing power and consequently revenue potential occurs during peak periods for most ML projects. Off-peak price is generally a fraction of the peak toll and even shoulder pricing can be significantly less than the core of the peak. Fitch expects most MLs to generate 70%–90% of their revenue during peak and peak-shoulder periods, and, so far, this has been demonstrated by all Fitch-rated operating facilities.
- With a large majority of revenues coming from peak periods, Fitch focuses on average peak period toll rates for an average trip distance in its analysis of toll rates and tolling practices.
- ML peak period toll rates are generally high compared with other toll roads as, unlike other sectors, these are derived via a congestion-relieving pricing mechanism by their very definition. Whereas high current toll rates on a normal toll road may indicate limited economic flexibility to implement further increases if needed, ML projects that generate higher average peak tolls while optimizing revenues and achieving strong tolled capture rates are viewed as having a stronger pricing power.

- Fitch believes that facilities with relatively stronger characteristics should, in the medium term, build up high pricing power and be in a position to levy relatively high toll rates of over $0.70 per mile (real) in peak periods, on average. Facilities with moderate-high pricing power are likely to achieve average peak period tolls of $0.50–$0.80 per mile, while those with weaker congestion characteristics may be able to levy tolls in the range of $0.30–$0.60 per mile on average in the peak of the peak periods.

  o On NTE, the typical maximum weekday passenger car toll rates were about $0.70/mile in the peak period, peak direction as of mid-2016.

  o 95 Express average peak period toll rates reached approximately $0.85 per mile by end of 2016.

  o Facilities that permit trucks derived about 30% of revenues from truck traffic.

Free Access Policy

- One of the most important factors assessed under ML characteristics component is the HOV policy and other policies governing free access to MLs. Different approaches to access policies make careful comparison essential. The nature of free access policies for HOVs and transit vehicles have a direct impact on tolled capture rates and revenue generation on MLs. In most cases, free access policies for HOVs with two or more passengers (HOV2) will prove problematic over time as nontolled vehicles crowd out paying drivers. In Fitch's view, the exclusion of HOV2 from free access is generally a minimum requirement for an ML facility in order for it to have adequate revenue generation capability.

- Projects that feature a policy allowing HOV3 to access MLs for free generally display much more moderate untolled usership, as discussed below. HOV3 penetration may evolve over time as carpooling behavior changes in various corridors. Fitch will continue to monitor projects where the increasing trend of toll-free HOV3 traffic is observed and its impact on project finances.

- An exceptionally high share of untolled vehicles may lead to high congestion levels on the MLs, causing a decrease in their value to toll-paying drivers. With free-access vehicles crowding out MLs, the use of high tolls to limit demand and meet minimum travel speed requirements will thereby push out paying users and, consequently, limit revenue potential.

o The tolling policy on PRD's I-25 MLs was converted to free access for HOV3 on both I-25 and U.S. 36 in January 2017 from HOV2 free-access policy. However, there is some uncertainty as to demand during this transition process as the change in the policy may cause public opposition. In addition, the requirement that peak-period toll rates are no less than the Regional Transportation District's (RTD) express bus fare could limit revenue maximization for this project.

o The policy with respect to I-77 will allow free HOV3 access. The effect of an HOV3 free-access policy is expected to be more limited on the project initially as the bulk of ML traffic is anticipated from shorter distance trips in the central and northern sections of the project where carpooling is not prevalent. However, the long-term effect of the HOV3 free-access policy will depend on whether such a policy results in significantly increased carpooling in the service area to avoid tolls, as congestion increases. As the capability and use of ride-sharing technology increases, free access to HOV3 in certain corridors may pose a greater risk.

o 95 Express preserved the same HOV3 policy that was in place before the lanes were converted from HOV lanes. However, evidence suggests that carpooling became highly prevalent between Northern Virginia and Washington D.C. areas. Currently, untolled HOV3 traffic on the 95 Express is broadly in line with projections, representing approximately 30%–35% of ML volume in peak hours. This level of HOV3 traffic is high compared with other projects with HOV3 free-access policy. However, risk is partially mitigated by provisions requiring the grantor to partially compensate the project company for toll losses resulting from high HOV3 penetration rates when certain thresholds are exceeded.

o On the flip side, NTE and LBJ projects are not exposed to material revenue risk resulting from free-access policies as discounts (not free access) for HOV2 vehicles are subsidized by the grantor.

o The policy with respect to the SH 288 MLs will not allow free access to HOVs, which Fitch views as supportive to revenue generation.

o In the case of both OCTA and RCTC, HOV3 are free at all times except from 4 p.m. to 6 p.m. on weekdays in the eastbound direction only when HOV3 are

tolled at 50% of the single occupancy rate helping them achieve higher revenues during the most congested hours.

Configuration

- Limited available data prevents precise measurements of the effects of varying configurations. Still, Fitch qualitatively evaluates how well the project's configuration corresponds with time periods and directionality of heavy congestion.

  o For example, 95 Express' reversible configuration may be more efficient for this facility's needs due to its one directional-peak and shoulder-peak commuting pattern; users are familiar with this type of lane reversibility as this configuration was in place prior to lane conversion. Conversely, NTE's ability to capture counter-directional traffic in the peak hours seems intuitive given its two-directional traffic patterns.

  o IH 35E project's two reversible MLs will be separated by a concrete barrier, which Fitch believes will increase user value by removing the possibility of traffic weaving directly from GPLs. Although traffic is generally heavier in the commuting direction during peak periods, some bi-directionality has been noted. It is not yet clear if the reversible nature of the lanes will mean a material amount of missed revenue from the counter-directional commute.

  o OCTA's and RCTC's respective portions of SR-91 MLs offer single access point configurations that correspond well with the land-bridge nature of the road, enabling full distance trips for each of the two separate projects.

  o As for LBJ, NTE's Segments 1 and 2, I-77 and 95 Express, multiple access points along the road and direct access ramps provide drivers with more access to MLs, but also offer more opportunity to leave, potentially resulting in shorter, average trip distances. In addition, ramp up may be negatively influenced by the complexity of traffic movements associated with multiple entry and exit points. However, on NTE and LBJ, the drivers are locked in to pay for the length of each full segment regardless of the distance they travel on each segment.

  o SH 288 will feature two MLs per direction with four entry/four exit points along the mainline. In addition, there will be direct connector ramps at two major interchanges, which is one of the key features of the project as they provide road users with a paid alternative to bypass queuing on ramps.

- Fitch believes that single-lane ML facilities are likely to prove less attractive to potential users given the possibility of being stuck behind slow-moving traffic or a traffic incident without the ability to pass.

  o While the northernmost section of I-77 will have one lane in each direction, given the low current congestion levels, revenue expectations from this section are low. The single lane in each section on U.S. 36 coupled with RTD use could limit desirability for the ML. On the other hand, the user's familiarity with the existing reversible I-25 MLs (that corresponds well with the morning/evening commuting patterns of this corridor) will likely benefit ramp up.

  o Many of the projects will eventually link into ML networks and, in Fitch's view, while such interconnectivity could result in better accessibility and improved traffic demand profile for some segments in the network, other possibly less congested ML segments could become adversely affected as drivers have more options to choose across their entire journey. This risk is reflected in the overall assessment of the OCTA's volume assessment.

Configuration: Pros and Cons

Configuration Feature	Pros	Cons
Multiple Access Points	• Flexibility • Higher Capture Potential	• Shorter Trips • Weaving • Confusing for Users
Single Access Point	• Predictable Usage • Easy to Understand	• Inflexible
Continuous Access	—	• Operationally Problematic
Concrete Barriers	• Perception of Safety • Reduced Violation Rates	• Costly to Implement • Inflexible
Plastic Pylon Separators	• Cost Efficient	• Some Weaving Possible • Adverse Effect on Speed
Line Separation	• Very Cheap	• Weaving • Slower Driving Speed
Increased Shoulder	• Fewer Lane Closures • Higher Perception of Safety	—

Source: Fitch Ratings.

- ML configuration (in terms of entry and exit points, access ramps, reversibility and barriers) that inefficiently correlates with congestion points and traffic patterns, underutilizes highway connections and ultimately disincentives usage and/or encourages violations could adversely affect a project's rating. This includes additional free capacity enhancements that result in significantly improved GPL traffic flow that would likely cause lower traffic shift to MLs.

  - o In Fitch's view, ML configuration that has continuous access from GPLs would be one example of an extremely ineffective configuration. Fitch does not currently rate any ML projects with continuous access.

Revenue Risk – Volume: Overall Assessments

As described in the prior sections related to volume risk, when assessing volume risk for MLs, Fitch first looks at those factors that describe the strength of the corridor and then considers those factors that better describe the strength of the MLs versus GPLs within the corridor. The combination of the corridor volume and ML characteristics assessments determine the overall Revenue Risk – Volume assessment for these projects.

As noted previously, the ML characteristics assessments for facilities under construction or those currently in various stages of ramp up are constrained to weaker given heightened uncertainty due to lack of demand history. To provide more clarity behind the assessments, volume assessments are outlined in the *Revenue Risk – Volume Assessments* table.

- The combination of stronger characteristics assessments for 95 Express, LBJ, NTE and RCTC (weak ML assessment primarily weighed down by lack of demand history) resulted in the overall Revenue Risk – Volume assessments of midrange.
- In the case of OCTA, the overall Revenue Risk – Volume remained at midrange. This stems from aforementioned concerns that RCTC's connecting MLs ultimately may compete with, rather than complement, OCTA's lanes; thus, the midrange ML characteristics assessment drives the overall volume assessment.
- For I-77, the overall volume assessment of weaker reflects a combination of a midrange corridor volume assessment and a weaker ML characteristics assessment. In this case, the weaker assessment reflects not only the lack of demand history but also the congestion characteristics of the project with excess capacity in parts of the project corridor closest to downtown and reliance on congestion from developing suburban regions, all contributing to the overall weaker assessment.

Revenue Risk — Volume Assessments

Project	Corridor Volume	Managed Lane Characteristics	Revenue Risk: Overall Volume
95 Express Lanes LLC (VA)	Stronger	Weaker	Midrange
I-77 Mobility Partners LLC (NC)	Midrange	Weaker	Weaker
BlueRidge Transportation Group (SH-288 Managed Lanes, TX)	Midrange	Weaker	Midrange
High Performance Transportation Enterprise (HPTE, C-470 Express Lanes Project, CO)	Stronger	Weaker	Midrange
LBJ Infrastructure Group LLC (TX)	Stronger	Weaker	Midrange
North Tarrant Express Mobility Partners (TX)	Stronger	Weaker	Midrange
Orange County Transp. Authority (SR 91, CA)	Stronger	Midrange	Midrange
Plenary Roads Denver, LLC (US 36 MLs Phases I & 2 and I-25 Managed Lanes, CO)	Midrange	Weaker	Weaker
Riverside County Transp. Commission (SR 91, CA)	Stronger	Weaker	Midrange
Texas Department of Transportation (IH-35E Managed Lanes, TX)	Midrange	Weaker	Midrange

Source: Fitch Ratings.

- The overall volume assessment for PRD is also weaker reflecting a combination of a midrange corridor volume assessment and a weaker ML characteristics assessment. In addition to lack of demand history, the weaker volume assessment reflects the risks associated with isolated congestion points; efficiency limitations of a single-lane operation; and potentially elevated elasticity to higher tolls, particularly due to required toll increases to match RTD's express bus fares.
- Both SH 288 and IH 35E have an overall volume assessment of midrange, reflecting their respective midrange corridor assessments and weaker ML characteristics due to the fact that both projects are still in construction phases with uncertainty related to future ramp up.

Revenue Risk – Price: Legal and Political Rate-Making Flexibility

This attribute is primarily concerned with the price-setting framework within which an ML operator operates, and the degree to which it would be legally and politically able to protect its revenue profile from traffic volatility by raising toll rates to the degree necessary. While unlimited rate-making authority would be considered a stronger feature, it may be constrained if the toll road operates in a politically charged environment. It should be noted that all Fitch-rated ML projects are required to adjust toll rates to maintain specified speed levels.

Most ML projects have a combination of stronger and midrange assessments for legal and political rate-making flexibility. Fitch considers the choice of a toll-pricing

mechanism as well as the extent to which residents in the area are familiar with tolling in general and area users' familiarity with ML tolling, and the extent to which it could lead to heighted political risk with public disapproval and impact ramp up.

- ML pricing power is expected to rise as driving conditions deteriorate on the corridor, leading to the ability to generate sustained above-inflationary increases in toll rates. However, at some point, as rates significantly increase, public sector facilities may come under increased pressure to hold rates lower than necessary to ensure required travel speeds. Public authorities will have less flexibility to change policy with respect to private projects operated under a concession and may face public outcry in response to inefficient congestion management.

  o NTE, LBJ and SH 288 project concession agreements allow for revenue maximization up to a soft cap on toll rates. Rates may only be increased beyond this cap if the concessionaire is unable to maintain minimum travel speeds in the MLs, implying a switch to throughput maximization at these levels.

  o Toll rates on publicly operated IH 35E will be also subject to a soft cap. While the soft cap structure limits some of the operator's legal pricing flexibility, it may also help offset some political risk in a scenario of high congestion (low-moderate political risk offsets limited legal rate-making flexibility).

  o In theory, the operator can adjust the cap during times of deteriorating performance, but given limited history on such increases with facilities having been open only for a short time, there is little evidence of them being able to adjust the cap in practice with material flexibility; therefore, price risk assessments for all four projects is midrange.

- While caps can serve to limit rate-making flexibility, minimum toll rate requirements (or toll rate floors) could have a detrimental effect on revenue generation.

  o PRD's price risk assessment is midrange. The midrange assessment reflects some limitations on the operator's legal and political flexibility to increase rates, given that any such rate increases are subject to an approval by the board. In addition, the toll rate floor also serves to limit the operator's legal rate-making flexibility.

- Given the differences in the various toll-setting mechanisms being implemented (fully dynamic versus variable, distance-based versus flat rates, etc.),

benchmarking between various ML projects and comparisons to other toll road types may result in erroneous conclusions. Despite these complexities, as more operating evidence is becoming available, Fitch believes it is possible to form a view on proposed tolling practices for a given project. Fitch also considers users' familiarity with and acceptance of tolling in the area.

  o In the case of I-77, Revenue Risk – Price is midrange. Although there are no toll caps or minimum tolling requirements and the project company has unlimited legal and theoretically political flexibility to increase tolls in excess of inflation, there remains a great deal of uncertainty as to the willingness to use the MLs in the service area with the lack of any other toll roads in the region. In Fitch's view, toll rate ramp up for this facility is likely to take longer as people in the area get used to the MLs and the dynamic, all-electronic tolling mechanism, and as transponder use grows in popularity. This risk is somewhat exacerbated by continuing significant public opposition of this project.

  o As for 95 Express, OCTA and RCTC, the price risk is assessed at stronger with all projects benefiting from unlimited rate-making flexibility and good familiarity with electronic tolling and MLs in the area.

Infrastructure Development/Renewal: Capital Improvement Planning and Funding Sources

Except in cases where a project's infrastructure is in particularly poor condition with no clear finance plan for remediation, the Infrastructure Development and Renewal Risk attribute tends to have a lower impact on a project's rating.

In the vast majority of cases, Fitch-rated ML projects have adequate or good remediation works-planning procedures to address ongoing needs when they arise. Plans in place to tackle identified near- and medium-term required works are generally sufficiently thought through and detailed to ensure issues are adequately rectified, with funding sources identified and factored into financial projections to ensure that the financial impact of such works is transparently set out for creditors. Furthermore, mechanisms that ensure cash is reserved in advance for expected works, where they exist, provide additional comfort to Fitch.

- All Fitch-rated MLs have an assessment of stronger reflecting 10 out of 11 brand new (or to be constructed) facilities. For most projects, contractual framework requires independent engineers validating renewal and replacement expenditures

and full recovery of expenditures from cash flows via forward-looking reserving mechanisms. In addition, all projects have considerable debt-free tails following debt maturities mitigating asset reinvestment risk.

- OCTA's stronger attribute assessment reflects a successful track record of implementing capital works on time and on budget in the past and limited capital requirements over the medium term.

Debt Structure: Risk Derived from Financing Profile

Fitch's MLs portfolio is not exposed to refinancing risk with all publicly rated U.S. ML projects employing fixed-rate, amortizing back-loaded debt structures. Part or all of the debt financing used by all of the projects, with the exception of OCTA, was provided in the form of TIFIA federal loans, including significant amounts of deferrable debt service, particularly in the early years of project operations.

- In Fitch's view, this level of flexibility in the debt structure helps mitigate some concerns surrounding the opening year traffic and length of the ramp up period in the early years of operations.
- Access to additional liquidity for debt service support, such as the developer ratio adjustment mechanism (DRAM) in the I-77 project, can provide support to project's investment-grade rating.

As is typical for TIFIA loan facilities, they were granted on a "springing" subordinate lien under which the loan ranks subordinate to senior debt unless a bankruptcy event occurs, after which it ranks pari passu with any senior debt outstanding. Since a bankruptcy event has a relatively wide definition, including items such as payment default extending beyond 12 months on the TIFIA loan, Fitch takes the view that in most scenarios involving an impairment of the TIFIA loan, a cross-default of the senior lien would occur and, therefore, one combined Debt Structure assessment for both liens — the senior lien and the subordinate TIFIA loan — is assigned.

- All publicly rated ML projects, except for OCTA, have a Debt Structure assessment of midrange reflecting the back-loaded nature of their respective debt service schedules, which may become exacerbated by any scheduled TIFIA deferral in the event that performance falls short of expectations. The assessments also reflect adequate structural features with cash-funded debt service reserves and satisfactory covenant packages.
- OCTA has a Debt Structure score of stronger reflecting a fixed-rate senior debt lien with level debt service requirements.

Debt Service: Risk Associated With Debt Burden

This attribute evaluates an ML's ability to service debt and its financial flexibility to respond to cyclical economic shocks or temporary shifts in asset utilization. Fitch primarily considers some combination of leverage, typically defined as being net debt to cash flow available for debt service (CFADS), and coverage is usually expressed as the debt service coverage ratio (DSCR).

As per criteria, Fitch does not assess this risk factor stronger, midrange or weaker, since the assessment of whether a set of metrics would be considered stronger, midrange or weaker for a given ML facility would entirely depend on the other five KRF assessments.

- For example, PRD's relatively low leverage and flexible debt structure allows it to achieve an investment-grade rating with the combination of weaker Revenue Risk – Volume score and midrange Revenue Risk – Price assessment.
- OCTA demonstrates significantly stronger metrics than peers or indicative criteria guidance. However, the rating is constrained in the 'A' category due to the idiosyncratic risks and the inherent volatility associated with this asset class.

Appendix A

Key Rating Driver Assessments for Toll Roads, Bridges and Tunnels

	Revenue Risk: Volume	Revenue Risk: Price	Infrastructure Development/Renewal	Debt Structure
Description	• Resilience of traffic volumes to macroeconomic stress, competition, and other event risks. • Current toll rates relative to peers and distance to perceived revenue maximization point.	• Demonstrated willingness and ability to increase tolls. • Nature of any caps (statutory, contractual or political).	• Approach to the ongoing capital program and maintenance, including planning, funding, management. • Adequacy and appropriateness of investment scope.	• Fixed-/variable-rate debt maturity profile. • Amortization profile, refinance risk. • Flow of funds, distribution test and reserves.
Stronger	• Proven resilient traffic base with relatively low volatility. • Includes facilities with near monopolistic characteristics (i.e. an essential road with a large commuter base, limited competing roads, or other modes of transportation). • Low elasticity. • Low toll rates.	• Legal or contractual flexibility to increase rates in excess of inflation. • Minimal legislative or political interference. • In practice, rates can be, and historically have been, increased with material flexibility above inflation.	• Highly developed and detailed capital and maintenance plan. • Annual inspections with objective and quantitative measures. • Additional leverage needs are limited to less than 50% of future capital spending requirements. • Concession framework provides for full recovery of expenditure via adjustment in rates. • Road capacity well above medium-term traffic forecasts.	• Senior debt. • High percentage of fixed-rate debt. • Limited refinance risk or fully amortizing debt. • Strong covenant package and reserves. • Sweep of significant portion of excess cash flow to repay debt. • Level-to-decreasing debt service profile.
Midrange	• Proven traffic base with relatively moderate volatility. • 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. • Price elasticity of demand to toll increases is low to moderate. • Moderate toll rates.	• Legal or contractual framework allows periodic rate increases that track inflation. • Some legislative or political interference. • In practice, rates historically have been increased at around inflation.	• Moderately developed capital and maintenance plan. • Additional leverage needs generally represent 50%–75% of future capital spending requirements. • Concession framework provides for adequate recovery of expenditure via adjustment in rates. • Road needs some expansion or rehabilitation to accommodate medium-term traffic forecasts.	• Junior debt with limited subordination. • Some variable-rate risk present. • Moderate use of bullet maturities or large issuer with established market access and active management of several bullet maturities. • Some imbalance from swaps/derivatives. • Adequate covenant package and liquidity reserves. • Some back-loading of debt.
Weaker	• Traffic with limited or no history; relatively high volatility. • Includes facilities with high discretionary traffic, meaningful competition or greenfield projects. • Untested or high price elasticity of demand. • High toll rates.	• Legal and contractual framework limits periodic rate increases well below inflation. • Considerable legislative or political interference. • Limited history of toll rate increases.	• Weak planning mechanisms and history of deferred maintenance. • Future spending requirements will be primarily debt funded. • Concession framework doesn't provide for a significant recovery of expenditure via adjustment in rates. • Road capacity significantly below medium-term traffic forecasts.	• Deeply subordinated debt exposed to or negatively affected by protective features of the senior debt. • High percentage of variable-rate debt. • Significant use of bullet maturities. • Use of derivatives resulting in imbalanced exposure. • Loose covenant package and liquidity reserves. • Significant back-loading of debt.
Relevant Metrics	• Local and regional economic data. • Type of corridor. • Traffic volume volatility over time. • Traffic composition. • Competing roads/alternative transportation modes. • Elasticity and toll rate per kilometer/mile. • Value of time.	• Toll rate relative to any cap.	• Asset quality. • CIP program specifics.	• Percentage of fixed-/variable-rate debt. • Percentage subject to refinance risk. • Rate covenant. • Level of reserves. • Distribution test. • Amortizing debt or bullets. • Debt service CAGR.
Debt Service	This key rating driver considers metrics for liquidity, debt service coverage and leverage in the context of the overall risk profile determined by review of the other key rating drivers. For example, a large, mature, toll road network with predominantly midrange and stronger characteristics could be rated in the 'A' category with debt service coverage ratios of between 1.40x–1.50x in the rating case. Moreover, a project's rating may be constrained by a "weaker" assessment on a key rating driver notwithstanding coverage ratios that may otherwise suggest a higher rating. This is discussed more fully under the *Debt Service* section below.			
Completion Risk	When present, this key risk factor is assessed using the analytical framework described generally in this report and in more detail in the *Appendix* of the master criteria report, *Rating Criteria for infrastructure and Project Finance*, dated July 8, 2016. The framework is used to derive the maximum possible rating during completion phase, based on complexity and scale, contractors and implementation plan, ability to replace contractor, and core contractual terms, as well as liquidity available to support a project in case of contractor default.			
Relative Importance of Key Rating Drivers	Revenue risk (Price and Volume) key rating factors generally have the most direct influence on operating toll roads ratings. This is because toll road operators usually have a relatively rigid cost base and, therefore, a lower than expected revenue flow could materially affect the projected cash flow generation and relevant coverage and leverage metrics. The Infrastructure Development/Renewal attribute often has a relatively lower importance to the rating analysis as project's maintenance and expansionary investments are usually regularly overseen and controlled by the concession grantor/public authorities. Debt Structure has a relative higher influence on rating analysis as covenants, security and other protective features embedded in the debt structure enhance creditors' protection.			

CIP – Capital improvement program.
Source: Fitch Ratings.

Appendix B

Managed Lanes Revenue Volume Risk Factors

Assessment	Revenue Risk — Corridor Volume	Revenue Risk — Managed Lanes Characteristics
Stronger	• Proven resilient corridor traffic base with relatively low volatility. • Near monopolistic characteristics (e.g. an essential road with a large commuter base, limited competing roads, or other modes of transportation). • Large and robust MSA with strong socioeconomic trends.	• Inherent volatility in managed lanes traffic and revenue is inconsistent with a "stronger" risk assessment.
Midrange	• Proven corridor traffic base with moderate volatility. • A relatively large percentage of commercial or discretionary traffic; an essential road facing some degree of competition from competing roads or other modes of transportation. • Midsize MSA with solid economic underpinnings. Moderate growth area or growing region with some dependence on future development.	• Proven ML traffic base with relatively moderate volatility. Price elasticity of demand of toll increases is demonstrably low to moderate. • Moderate exposure to exempt vehicles (including scenarios in which compensation is received for exempt vehicles). • Moderate to high levels of congestion during peak commuting periods (including shoulder periods), but relatively free flowing conditions during other time periods. Limited two-directional congestion. • Efficient configuration. Moderate capture rates considering the configuration of the road. Moderate average trip distances as compared with the full length of the project.
Weaker	• Corridor traffic with limited or no history; relatively high volatility. • A large percentage of leisure or single purpose traffic; meaningful competition or expansion of competing facilities; or greenfield projects. • Small MSA with below average wealth levels and stagnant to decreasing socioeconomic trends.	• Lack of demand history. Unproven or prolonged weak ramp-up period. Elevated volatility to economic shocks and relatively high seasonal volatility. Untested or demonstrably high price elasticity of demand. • Loose free access and other policies governing access to MLs that prevents pricing as an effective means of control of access to MLs and limit revenue potential. • Configuration (in terms of entry/exit points and ramps/reversibility and barriers) that inefficiently correlates with congestion points and traffic patterns, underutilizes highway connections and ultimately discourages usage and/or encourages violations. Increase in free GPL capacity that would meaningfully improve GPL flow eliminating congestion levels over a medium to longer term. • Low levels of congestion even in the peak periods. Low capture rates considering the configuration of the road. Very low average trip distances as compared to the full length of the project.

ML – Managed lane. GPL – General purpose lane.
Source: Fitch Ratings.

Appendix C

Managed Lanes Ratings and Attributes

Project	Senior Lien Rating	Subordinate Lien Rating	Outlook	Completion Risk	Revenue Risk: Volume	Revenue Risk: Price	Infrastructure Development/Renewal	Debt Structure
95 Express Lanes LLC	BBB–	BBB–	Positive	N.A.	Midrange	Stronger	Stronger	Midrange
I-77 Mobility Partners LLC	BBB–	BBB–	Stable	Midrange	Weaker	Midrange	Stronger	Midrange
BlueRidge Transportation Group (SH-288 Managed Lanes, TX)	BBB–	BBB–	Stable	Midrange	Midrange	Midrange	Stronger	Midrange
High Performance Transportation Enterprise (HPTE, C-470 Express Lanes Project, CO)	BBB (EXP)	BBB (EXP)	Stable	Midrange	Midrange	Midrange	Stronger	Midrange
LBJ Infrastructure Group LLC	BBB–	BBB–	Stable	N.A.	Midrange	Midrange	Stronger	Midrange
North Tarrant Express Mobility Partners	BBB–	BBB–	Stable	N.A.	Midrange	Midrange	Stronger	Midrange
Orange County Transp. Authority (SR 91)	A	N.A.	Stable	N.A.	Midrange	Stronger	Stronger	Stronger
Plenary Roads Denver, LLC (US 36 MLs Phases I and 2 and I-25 Managed Lanes)	BBB–	BBB–	Stable	N.A.	Weaker	Midrange	Stronger	Midrange
Riverside County Transp. Commission	BBB–	BBB–	Stable	Stronger	Midrange	Stronger	Stronger	Midrange
Texas Department of Transportation (IH-35E Managed Lanes, TX)	N.A.	BBB	Stable	Stronger	Midrange	Midrange	Stronger	Midrange

EXP – Expected rating. N.A. – Not applicable.
Source: Fitch Ratings.

Revenue Risk — Volume Assessments

Project	Corridor Volume	Managed Lane Characteristics	Revenue Risk: Overall Volume
95 Express Lanes LLC (VA)	Stronger	Weaker	Midrange
I-77 Mobility Partners LLC (NC)	Midrange	Weaker	Weaker
BlueRidge Transportation Group (SH-288 Managed Lanes, TX)	Midrange	Weaker	Midrange
High Performance Transportation Enterprise (HPTE, C-470 Express Lanes Project, CO)	Stronger	Weaker	Midrange
LBJ Infrastructure Group LLC (TX)	Stronger	Weaker	Midrange
North Tarrant Express Mobility Partners (TX)	Stronger	Weaker	Midrange
Orange County Transp. Authority (SR 91, CA)	Stronger	Midrange	Midrange
Plenary Roads Denver, LLC (US 36 MLs Phases I & 2 and I-25 Managed Lanes, CO)	Midrange	Weaker	Weaker
Riverside County Transp. Commission (SR 91, CA)	Stronger	Weaker	Midrange

Source: Fitch Ratings.

Appendix D

Operating Managed Facilities

95 Express	Orange County Transp. Authority (SR 91, CA)	95 Express Lanes LLC (VA)	North Tarrant Express Mobility Partners (Segments 1 and 2, TX)	LBJ Infrastructure Group LLC (TX)	Plenary Roads Denver, LLC (US 36 MLs Phases 1 and 2 and I-25 Managed Lanes, CO)
Owner/Operator	Orange County Transportation Authority (OCTA)	Transurban	Cintra/Meridiam/Dallas Police and Fire Pension System	Cintra/Meridiam/APG/Dallas Police and Fire Pension System	Plenary Group (Canada), Ltd. (Plenary Group)
Opening Date	December 1995	December 2014	October 2014	September 2015	March 2016
Configuration	2 ML/5 GPL in each direction	2–3 ML (reversible)/4 GPL in each direction	NTE 1: 2 ML/ 2 GPL/ 2 frontage NTE 2: 2 ML/3 GPL, 2 frontage in each direction	2–3 ML/4 GPL/ 2–3 frontage in each direction	1 ML/2 GPL in each direction on US36. 2 ML (reversible)/3 GPL I-25
Length	10 miles	28 miles	13.26 miles	13.25 miles	US36 Phase 1:10 miles; US36 Phase 2: 5 miles, I-25: 7.7 miles
Lane Miles	40 miles	70 miles	53.2 miles	60 miles	45.4 miles
Access	Single	Multiple	Multiple but pay by segment	Multiple but pay by segment	Multiple
Pricing	Variable time of day	Dynamic	Dynamic pricing with a soft cap on toll rates of $0.75 ($2009) per mile	Dynamic pricing with a soft cap on toll rates of $0.75 ($2009) per mile	Variable. Requirement that peak-period toll rates are no less than the RTD express bus fare
Policy	50% discount for HOV 3+ (and zero emission) in peak, HOV 3+ free during off-peak	HOV 3+ free	50% peak period discount for HOV2+ until 2025, discount is fully subsidized by TxDOT; trucks pay higher toll, based on shape	50% peak period discount for HOV2+ until 2025, discount is fully subsidized by TxDOT; trucks pay higher toll, based on shape	HOV 3+ free (converted from HOV2 in January 2017)
Total Debt Outstanding (Excl. Accruals)	$109.13 million (fiscal 2016)	$563 million	$1,050 million	$1,465 million	$157 million
2016 Total Revenues (Estimated)	$54 million (Fiscal 2016)	$78 million	$72.7 million	$75.2 million	$9.7 million
FRC FRUY Total Revenues	N.A.	N.A.	$79 million (2017)	$92 million (2018)	$17.6 million (2019)

FRC – Fitch's rating case. FRUY – Fully ramped up year. ML – Managed lane. GPL – General purpose lane. HOV – High occupancy vehicle. N.A. – Not applicable. TXDOT – Texas Department of Transportation. RTD – Regional Transportation District. Note: Orange County Transportation Authority's 2016 revenue figures are reported on fiscal-year basis, ending June 30. Unless otherwise noted, total revenues for other projects are presented on calendar-year basis.
Source: Obligors, Fitch Ratings.

Managed Lane Facilities Under Construction

	Riverside County Transp. Commission (SR 91, CA)	I-77 Mobility Partners LLC (NC)	BlueRidge Transportation Group (SH-288 Managed Lanes, TX)	Texas Department of Transportation (IH-35E Managed Lanes, TX)	High Performance Transportation Enterprise (HPTE, C-470 Express Lanes Project, CO)
Owner/Operator	Riverside County Transportation Commission (RCTC)	Cintra Infraestructuras, S.A. and Aberdeen Global Infrastructure II LLP	ACS ID, Shikun & Binui USA, InfraRed, Northleaf, Clal Insurance Group, Star America	Texas Department of Transportation	Colorado High Performance Transportation Enterprise
Opening Date	March 2017	December 2018	July 2019	May 2017	July 2019
Configuration	2 ML/5 GPL in each direction	1–2 ML/2–4 GPL in each direction	2 ML/3–4 GPL in each direction	2 MLs (reversible)/ 3–4 GPLs in each direction	EB: 1 ML/2 GPL; WB: 1–2 ML/2 GPL
Length	8 miles on SR 91; 2 miles on I-15	26 miles	10.3 miles	18.8 miles	11 miles
Lane Miles	32 miles	94.4 miles	41.2 miles	38 miles	31.1 miles
Access	Single	Multiple	Multiple	Multiple	Multiple
Pricing	Variable time of day	Dynamic after first 6 months of operations	Fixed time of day schedule up to soft toll cap of $0.75 ($2012) per mile ($1.50 per mile on direct connectors)	Dynamic pricing with a soft cap on toll rates of $0.75 ($2012) per mile	Variable time of day
Policy	50% discount for HOV 3+ weekday EB p.m. peak hours, HOV 3+ free during all other times	HOV 3+ free	No HOV discount or exemption from tolls	50% discount for HOV 2+ in peak until 2018	No HOV discount or exemption from tolls
Total Debt Outstanding (Excl. Accruals)	$598 million	$289 million	$630 million	$285 million	$286 million
FRC FRUY Total Revenues	$29.5 million (2021)	$24.9 million (2023)	$30.9 million (2025)	$14.8 million (2021)	$13.4 million (2022)

FRC – Fitch's rating case. FRUY – fully ramped up year. ML – Managed lane. GPL – General purpose lane. HOV – High occupancy vehicle. EB – Eastbound. WB – Westbound. Note: Total revenues are presented on fiscal-year basis for each facility.
Source: Obligors, Fitch Ratings.

FitchRatings