

Review of the Comprehensive Agreement for the I-77 Express Lanes Project



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**Comments and suggestions can be submitted
on the I-77 Express Lanes project page on the NCDOT website.**

<https://www.ncdot.gov/projects/I-77ExpressLanes/>

Prepared by



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DISCLAIMER

Mercator Advisors LLC was retained to provide an independent review of the Comprehensive Agreement between the North Carolina Department of Transportation (NCDOT) and I-77 Mobility Partners LLC. This report identifies potential policy options for consideration. The information presented is not legal advice and the report is not a market valuation or an appraisal review.

The views and opinions provided in this document are strictly those of the authors. This report does not represent the opinions or policies of NCDOT, its agents, officers, or employees.

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Provided Under Separate Cover

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1. Purpose and Scope of the Review

Mercator Advisors LLC (Mercator) was retained by the North Carolina Turnpike Authority (NCTA) to review the Comprehensive Agreement (CA) between the North Carolina Department of Transportation (NCDOT) and I-77 Mobility Partners LLC (Private Partner), the private consortium awarded the contract to finance, develop, design, construct, operate and maintain the I-77 Express Lanes Project (Project or Express Lanes Project).

Mercator is a financial consulting firm that specializes in providing strategic advice to public agencies undertaking large and complex capital investments. The firm has particular expertise with infrastructure financings that include tax-exempt toll revenue bonds and loans provided under the federal Transportation Infrastructure Finance and Innovation Act (TIFIA) program.

The primary purpose of this review is to identify and evaluate potential policy options that might address questions and concerns expressed by members of the public regarding implementation of the high occupancy toll (HOT) lanes concept and certain provisions in the CA. Mercator's scope of work includes:

- Analyzing the allocation of key project risks in the CA and the potential financial liabilities assumed or shared by each partner;
- Reviewing comments and suggestions submitted by project stakeholders and the public; and
- Evaluating the merits and potential costs associated with various policy options, including, but not limited to, termination of the CA, renegotiation or modification of the CA to achieve certain policy objectives or to facilitate the purchase of the completed facility by a public entity.

2. I-77 Express Lanes Project

The Express Lanes Project provides improvements along nearly 26 miles of the I-77 corridor north of Charlotte, including the conversion of existing high occupancy vehicle (HOV) lanes to express lanes and the construction of new express lanes and two major interchanges.¹ As shown in Figure 1 on the next page, the Express Lanes Project is comprised of three sections:

In the North Section, one express lane will be constructed in each direction on a nine-mile section of I-77 from NC 150 (Exit 36) to the interchange at Catawba Avenue (Exit 28). There are currently two general purpose lanes in each direction and no HOV lanes in that section of I-77.

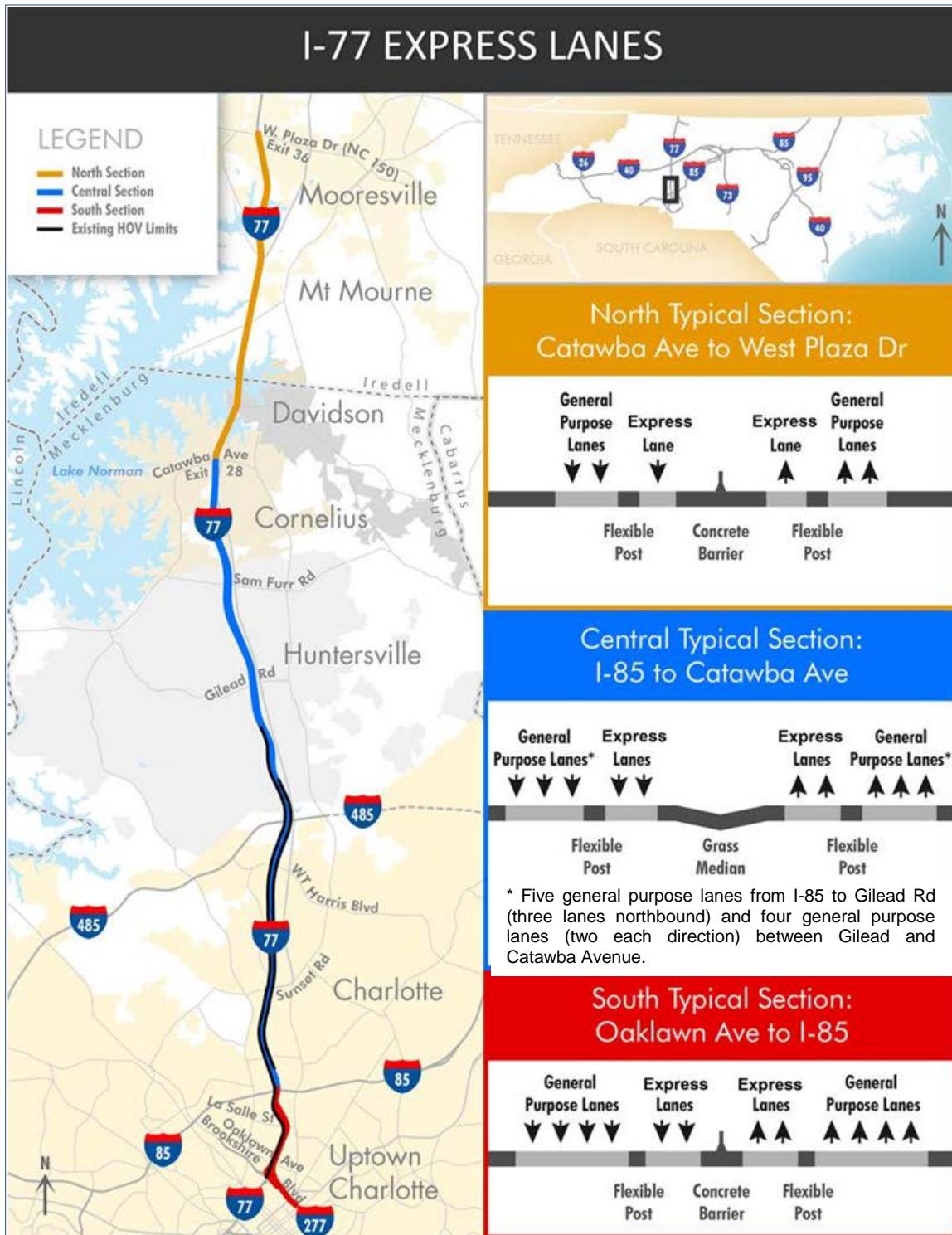
The Central Section, which is approximately 15 miles long, extends from Catawba Avenue (Exit 28) to just north of the I-85 interchange (Exit 13). A portion of the Central Section (approximately five miles) currently has three general purpose lanes and one HOV lane in each direction. The remainder of the

¹ Since high-occupancy vehicles with three or more people (HOV 3+) and other exempt vehicles will be able to use the I-77 toll lanes without charge if they have NC Quick Pass™ transponders, the toll lanes are often referred to as HOT lanes or priced managed lanes. For purposes of this report, the term "express lanes" is generally used for the toll lanes.

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Central Section has three or two general purpose lanes in each direction and no HOV lanes. The existing HOV lanes will be converted to express lanes and extended the full length of the section and a second express lane in each direction (adjacent to the converted HOV lane) will be constructed within the median.

Figure 1: Express Lanes Project Map



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The South Section extends approximately two miles from north of the I-85 interchange (Exit 13) to an interchange with I-277 (Exit 11) in Uptown Charlotte. There are currently four general purpose lanes in each direction and one HOV lane in the southbound direction. Improvements to the South Section include converting the existing southbound HOV lane to an express lane and constructing a second express lane in the southbound direction. Two northbound express lanes will be constructed on I-77 including a flyover bridge providing direct access for express lane users to and from I-277.

3. Express Lanes Project Development and Status

This section is intended to provide context for the risk allocation analysis and the review of public comments. It describes the initial development of the express lanes concept, the competitive procurement process that resulted in the contract with the Private Partner, the anticipated sources and uses of funding secured for the Express Lanes Project, amendments made to the CA after it was executed, and the status of the design and construction work.

3.1 Initial Development of the Express Lanes Concept

In May 2010, the Mecklenburg-Union Metropolitan Planning Organization (MUMPO) endorsed the concept of converting the existing HOV lanes on I-77 to express lanes and extending them to at least Exit 28. The action was taken after considering the results of NCDOT feasibility studies that indicated the express lanes would provide an incentive for increased transit use and ridesharing and improve travel times in the existing general purpose lanes until funding could be secured to widen I-77.²

The 2010 feasibility study indicated that toll revenue generated by the express lanes could cover annual operating expenses but may not be sufficient to finance the total cost for design and construction. A public-private partnership (P3) with private financing was identified as a potential option for consideration, but NCDOT initially pursued public funding. In August 2010, NCDOT submitted an application to the United States Department of Transportation (USDOT) for grant funding under the competitive Transportation Investment Generating Economic Recovery (TIGER) program. The grant request was for \$30.1 million, approximately 53 percent of the estimated \$56.9 million cost (in 2009 dollars) to convert the existing HOV lanes on I-77 and extend one express lane in each direction north to locations near Exit 28. Proceeds from toll revenue bonds were expected to cover approximately \$21.7 million (38%) of the project cost and MUMPO had endorsed the use of Congestion Mitigation and Air Quality (CMAQ) funding to pay for \$5 million (9%) of the project cost.

Letters of support for the 2010 TIGER grant application were provided by the North Carolina congressional delegation, MUMPO and several organizations in the Lake Norman area. In October 2010, USDOT announced that the project was not awarded the grant. A total of \$600 million was available for TIGER grants that year and USDOT received nearly 1,000 construction grant applications requesting more than \$19 billion.

² Executive Summary for I-77 HOV to HOT Conversion Study is available at:
https://connect.ncdot.gov/projects/planning/FeasibilityStudiesDocuments/I-5405_Feasibility-Study-0810B_Executive-Summary-2010.pdf

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In early 2011, NCDOT worked with members of the Technical Coordinating Committee (TCC) to identify federal funds programmed for future improvements along North I-77 that could be used to accelerate the express lanes project. (The TCC, the technical advisory committee to MUMPO, is comprised of staff from member agencies and stakeholders). The reprogrammed federal funds, together with the estimated proceeds from toll revenue bond proceeds, allowed the express lanes project (one in each direction to Exit 28) to be included in the list of proposed amendments to the Fiscal Year (FY) 2012-2018 Transportation Improvement Program (TIP) that was released for public comment in April 2011. On July 20, 2011, MUMPO adopted the TIP and amended the 2035 Long-Range Transportation Plan (LRTP) to include the publicly funded express lanes project.

3.2 P3 Procurement Process

In September 2011, NCDOT informed MUMPO that it was evaluating the feasibility of using a P3 project delivery approach for the express lanes project. In a presentation to the TCC in October 2011, NCDOT outlined several scenarios that were being examined, including expanding the project scope to extend the express lanes south to I-277 and/or further north to Exit 33 or Exit 36 and adding a second express lane in each direction.³

In November 2011, NCDOT provided an update to MUMPO on the potential P3 procurement. During the discussion, it was noted that the minimum occupancy level to qualify for free use of the express lanes could be increased from two or more people to three or more. NCDOT and its P3 advisors conducted an education session on P3s for MUMPO members on January 18, 2012.

NCDOT initiated the P3 procurement by issuing a Request for Qualifications (RFQ) on February 15, 2012. The competitive procurement process followed guidelines established in the Public Private Partnerships Policy and Procedures adopted by the North Carolina Board of Transportation in June 2009.⁴

On February 23, 2012, NCDOT held an industry forum for companies interested in forming teams to pursue the opportunity to develop, design, build, finance, operate and maintain the Express Lanes Project for up to 50 years. NCDOT and its P3 advisors outlined an aggressive procurement schedule with the Request for Proposals (RFP) to be issued in June 2012, the proposals due in September 2012 and commercial close in December 2012. To ensure transparency, the industry forum presentations and drafts of all procurement documents were posted on the NCDOT website.

After the industry forum, eleven major developers and contractors requested one-on-one meetings with NCDOT and its advisors to discuss the proposed Express Lanes Project. Four consortia subsequently submitted statements of qualifications to NCDOT by the March 15, 2012 deadline. NCDOT evaluated the financial qualifications and relevant experience of each team as well as its proposed approach to developing the Express Lanes Project. On March 30, 2012, NCDOT announced that each of the four

³ http://www.crtpo.org/PDFs/Agenda_Minutes/2011/Presentations/TCC_2011_10_October_Presentation_02.pdf

⁴ Current version of the Public Private Partnerships Policy and Procedures document is available at:
<https://connect.ncdot.gov/letting/Design%20Build%20Resources/02.%20Public%20Private%20Partnership%20Policy%20Adopted%2001-09-14.pdf>

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potential bidders had been short-listed. As shown in the table below, all of the short-listed teams were led by international developers with private toll concession experience.

Table 1: Private Sector Teams Qualified by NCDOT to Bid on the Express Lanes Project

Proposer	Lead Contractors	Lead Designer
Vinci Concessions, S.A.S.	Archer Western Constructors, L.L.C. and Blythe Construction, Inc.	Parsons Transportation Group
ACS Infrastructure Development, Inc. and InfraRed Capital Partners Ltd.	Dragados U.S.A., Inc. and United Infrastructure Group, Inc.	Florence & Hutcheson, Inc.
Cintra Infraestructuras, S.A.	Ferrovial Agroman, S.A. and W.C. English, Inc.	Louis Berger Group, Inc.
OHL Concesiones, S.A.	Lane Construction Corporation and Obrascón Huarte Lain, S.A.	HDR Engineering, Inc.

A draft of the RFP, including the proposed CA, was issued to the short-listed teams in April 2012 for review and comment. Several one-on-one meetings were held with the teams to respond to questions and suggestions regarding the proposed contract requirements. The P3 procurement process slowed for several months as the project scope was refined and required planning and environmental studies were undertaken.

Between March 2012 and May 2013, MUMPO (which became CRTPO, the Charlotte Regional Transportation Planning Organization, in October 2013), worked with NCDOT to evaluate numerous scenarios for converting the existing HOV lanes to express lanes and extending them north as well as constructing one or two new express lanes in certain sections of I-77. The Express Lanes Project, as currently defined, was approved and included in the amended 2035 LRTP and the TIP on May 22, 2013.

An Environmental Assessment (EA) was completed in July 2013 for the South and North Sections of the Express Lanes Project. A Categorical Exclusion completed for the Central Section in July 2012 was incorporated into the EA to provide one environmental document for the Express Lanes Project. The Federal Highway Administration (FHWA) issued a Finding of No Significant Impact (FONSI) for the Express Lanes Project in October 2013.

Many additional one-on-one meetings were held with the four short-listed bidders to discuss the final RFP requirements and schedule. In addition, various pre-proposal submittals, including a preliminary tolling plan and proposed alternative technical concepts, were submitted to NCDOT for review.

NCDOT issued final versions of the RFP documents on March 18, 2014, and set March 31, 2014, as the due date for submission of technical and financial proposals. Cintra Infraestructuras, S.A. (Cintra) was the only team to submit a proposal. NCDOT and its advisors evaluated the Cintra proposal against more than 200 pass/fail and responsiveness criteria as well as internal cost estimates for the Express Lanes

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Project. On April 11, 2014, NCDOT announced the selection of Cintra as the apparent best value proposer subject to execution of the CA and other requirements.

As required under North Carolina General Statute (NCGS) Section 136-18 (39a), NCDOT submitted reports on the proposed P3 agreement to the Joint Legislative Transportation Oversight Committee, Joint Legislative Commission on Governmental Operations and the Chairs of the Transportation and Appropriation Committees sixty days prior to executing the CA. The Board of Transportation concurred in the award of the contract on June 5, 2014, and the CA was executed on June 26, 2014.

3.3 Sources and Uses of Express Lanes Project Funding

Financial close was achieved on May 20, 2015. Table 2 below summarizes the estimated sources and uses of the funds secured for design and construction of the Express Lanes Project.

Table 2: Estimated Sources and Uses of Express Lanes Project Funding (May 2015)

	<i>Dollars in Millions⁵</i>	
Private Equity Contributions	\$248	39.1%
Federal TIFIA Loan	\$189	29.7%
Tax-Exempt Private Activity Bonds (PABs)	\$100	15.7%
NCDOT Funding for Construction (Federal)	\$76	11.9%
NCDOT Funding for Construction (NC Highway Trust Fund)	\$18	2.9%
Bond Premium and Interest on Bond Proceeds	\$4	0.6%
Total Sources of Funds	\$636	100.0%
Design-Build Contract Price	\$444	69.9%
Tolling System and other Project Costs	\$103	16.3%
Right-of-Way	\$6	0.9%
Interest during Construction	\$16	2.4%
Development Fees and Financing Expenses	\$40	6.2%
Deposits to Reserve Accounts	\$25	3.9%
Working Capital	\$2	0.3%
Total Uses of Funds	\$636	100.0%

Additional background information about each source of funding is provided below.

Equity Participants

The financial proposal submitted by Cintra in March 2014 included \$234 million of equity provided by Cintra. The final equity commitment at financial close was \$14.2 million higher with approximately 90% provided by Cintra and the remaining amount by Aberdeen Global Infrastructure Partners II, L.P. Portions of Cintra's share were subsequently acquired by other investors. Table 3 shows the equity participants as of December 31, 2016.

⁵ Numbers may not add up due to rounding.

Table 3: Equity Participants as of December 31, 2016

Cintra I-77 Mobility Partners, LLC	50.10%
GCM TH Investments, LLC	20.58%
John Laing I-77 Holdco Corp	10.00%
Aberdeen Infrastructure Investment I-77 LLC	10.00%
GCM BD Investments, LLC	<u>9.32%</u>
	100.00%

Each equity participant is required to maintain an irrevocable standby letter of credit or cash collateral account in amount equal to its committed but unfunded obligation.

Federal TIFIA Loan

The TIFIA program was authorized by Congress in 1998. It allows the United States Department of Transportation (USDOT) to provide direct credit assistance to sponsors of major transportation projects in the form of a loan, a loan guarantee or a line of credit. Key objectives of the TIFIA credit program include encouraging development of new revenue sources and private investment in transportation infrastructure. It is a critical component of the financing plan for many start-up toll facilities because it provides low cost financing with flexible repayment terms. The interest rate on the TIFIA loan for the Express Lanes Project, for example, is 3.04 percent and no payment of interest or principal is required to be made during the first five years of operation. The amount of debt service that is required to be paid thereafter can vary based on available cash flow.

The Private Partner was ultimately responsible for obtaining all equity and debt financing for the Express Lanes Project, but NCDOT initiated the process for obtaining a TIFIA loan by submitting a letter of interest to USDOT in August 2012. The objective was to work with USDOT to develop a preliminary TIFIA term sheet with indicative terms and conditions to include in the RFP documents. Establishing common assumptions and parameters for the potential TIFIA loan was intended to create a level playing field for the bidders and to expedite USDOT review of the final TIFIA application to be submitted by the successful bidder.

Based on communications with USDOT in late 2012, NCDOT and its advisors developed a preliminary TIFIA term sheet that was included in the first addendum to the draft RFP documents released in August 2013. The pre-qualified bidders were required to use the assumptions in the TIFIA term sheet in developing their financial proposals and NCDOT assumed the risk of any subsequent change in the loan terms required by USDOT that had a substantial negative financial impact (and shared any change that had a positive impact).

A key assumption in the preliminary TIFIA term sheet was a maximum loan amount equal to 33 percent of the total project costs eligible for Federal assistance, which is the maximum percentage that USDOT has typically provided for approved projects. Based on that assumption, Cintra submitted a financial plan to USDOT in May 2014 that included a \$215 million TIFIA Loan. After extensive credit analysis and negotiation, USDOT agreed in April 2015 to provide up to \$189 million for the Express Lanes Project (approximately 30 percent of total eligible project costs). The lower TIFIA loan amount was offset in part

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by cost reductions achieved by modifying certain provisions in the CA prior to financial close and by an increase in the amount of committed equity and the construction funding provided by NCDOT.

The loan agreement between the Private Partner and USDOT was executed on May 19, 2015. It includes several provisions designed to mitigate the financial risk to U.S. taxpayers. Given the size of the loan, for example, the Private Partner was required to obtain two investment grade ratings. The TIFIA loan is rated “BBB-” by Fitch Ratings and “BBB” by DBRS Limited. In addition, the Private Partner is not permitted to make any distributions to equity investors during the first five years after substantial completion and any equity distributions after that date are subject to several restrictions. The TIFIA Loan is also subject to mandatory prepayment under certain conditions.

Tax-Exempt PABs

In 2005, Congress amended the tax code to allow private developers and operators to access the tax-exempt bond market available to states, cities and towns and public agencies and to permit the financing of up to \$15 billion of highway and freight transfer facilities, subject to certain limitations and restrictions. The United States Secretary of Transportation is responsible for allocating the \$15 billion of private activity bond authority among qualified projects. In April 2013, at the request of NCDOT, USDOT provisionally allocated up to \$350 million in PABs for the Express Lanes Project. Extensions of the PAB provisional allocation for the Express Lanes Project were approved by USDOT in March 2015 and May 2015.

The financial proposal developed by Cintra included \$100 million of PABs. In May 2014, the financial plan for the Express Lanes Project and related credit information was submitted to the North Carolina Local Government Commission (LGC) for review and approval. The LGC is composed of nine members: the State Treasurer, the Secretary of State, the State Auditor, the Secretary of Revenue, and five members appointed by the Governor and the General Assembly.

On April 28, 2015, the LGC approved the issuance of \$100 million of PABs which are an obligation of the Private Partner and payable solely from Express Lanes Project revenues. Pursuant to legislation adopted in 2012, NCDOT was permitted to serve as the conduit issuer for the PABs but the bonds do not constitute a debt of NCDOT, the State of North Carolina, the LGC, or any other instrumentality or agency of the State of North Carolina. The PABs are rated “BBB-” by Fitch Ratings and “BBB” by DBRS Limited. The low investment grade ratings are typical for toll facilities that are under construction.

The bond transaction closed on May 20, 2015. The average cost of the PABs is 4.55 percent and the majority of the debt, \$80 million, is scheduled to be repaid between 2050 and 2054. The long maturity is typical for start-up toll facilities funded with tax-exempt debt but such bonds are frequently refinanced after toll operations begin.

NCDOT Funding for Construction

The pre-qualified bidders were able to request up to \$170 million of public funding to help pay costs associated with the Express Lanes Project, with caps on the amount that could be drawn each year. The amount and timing of the requested public investment was one of the factors to be used in ranking the proposals.

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The financial proposal developed by Cintra included a request for \$88.2 million of construction funding (the Public Funds Amount) and \$75 million of contingent funding (the Developer Ratio Adjustment Mechanism or DRAM) that was not expected to be drawn. On June 1, 2015, the Public Funds Amount was increased to \$94.7 million in accordance with certain adjustments required under the CA to reflect the final financing terms.

The DRAM is only available after substantial completion of the Express Lanes Project and Cintra can only request payment from NCDOT if the projected annual net revenue after payment of operating expenses is not sufficient to pay scheduled debt service on the PABs and the TIFIA loan. The DRAM payments can be used to pay operating expenses and debt service or to make required deposits to debt service reserve accounts.

3.4 Amendments to the Comprehensive Agreement

NCDOT and the Private Partner can negotiate amendments to the CA at any point during the term of the agreement, subject to certain notice and consent provisions in the financing documents for the PABs and TIFIA Loan.

As of June 30, 2017, seven amendments had been negotiated. Brief descriptions of the key changes are provided in Table 4 below. NCDOT posts all amendments to the CA on its website.⁶

Table 4: Amendments to the Comprehensive Agreement

Amendment 1 <i>January 13, 2015</i>	Extends the Project Financing Deadline by 70 days from January 22, 2015 to April 2, 2015.
Amendment 2 <i>March 27, 2015</i>	Extends the Project Financing Deadline by 45 days to May 17, 2015.
Amendment 3 <i>April 28, 2015</i>	Extends the Project Financing Deadline by 10 days to May 27, 2015.
Amendment 4 <i>May 12, 2015</i>	Clarifies calculation of final Public Funds Amount; extends period for which NCDOT retains responsibility for maintenance of the general purpose lane pavement and other existing assets to March 31, 2017; modifies provisions for payment of work required by NCDOT to enhance cross slopes and other surface course improvements; and reduces certain transaction fees for electronic toll collections services.
Amendment 5 <i>June 1, 2015</i>	Updates certain definitions and exhibits to reflect adjustments made at financial close.
Amendment 6 <i>October 4, 2016</i>	Establishes technical provisions for construction, operation and maintenance of Customer Service Center and maintenance facilities.
Amendment 7 <i>March 29, 2017</i>	Extends period for which NCDOT retains responsibility for maintenance of the general purpose lane pavement and other existing assets to October 1, 2017; limits NCDOT liability for potential impacts of reconstruction of I-85 interchange; clarifies reporting and performance requirements for O&M work; reduces Public Funds Amount to \$87.13 million to reflect certain changes to design and technical provisions.

⁶ https://connect.ncdot.gov/letting/Pages/Design-Build-Letting-Details.aspx?let_id=1-77%20High%20Occupancy%20Toll%20Lanes

3.5 Status of Design and Construction

NCDOT issued Notice to Proceed #1 (NTP1) on August 22, 2014, which authorized the Private Partner to proceed with certain project development and preliminary design work prior to financial close. Notice to Proceed #2 (NTP2) was issued on May 28, 2015 following financial close.

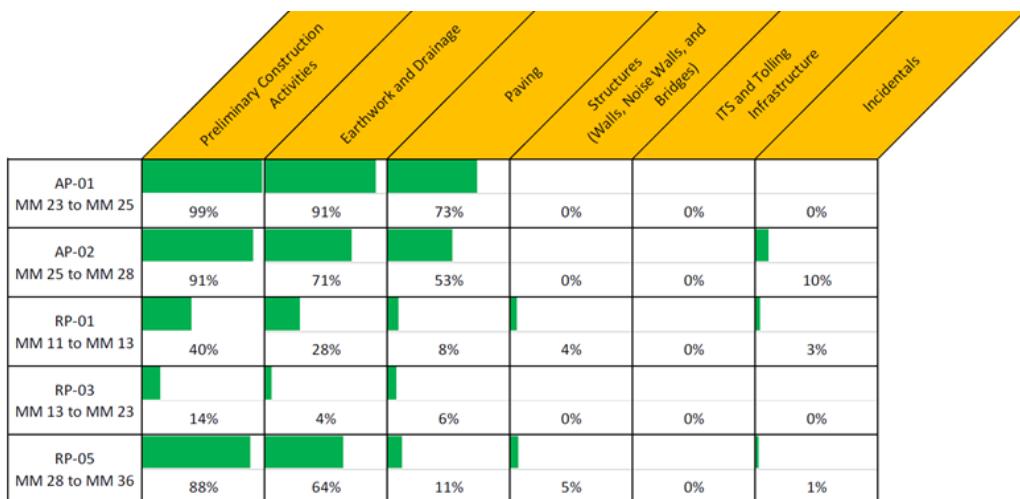
Approximately \$162 million had been expended as of December 31, 2016 according to the audited financial statements for I-77 Mobility Partners. That amount includes \$8 million that was contributed by NCDOT for NTP1 work prior to financial close. Table 5 shows the amount expended from each funding source as of December 31, 2016 and the total estimated expenditures through June 30, 2017.

Table 5: Project Expenditures by Source of Funding

<i>Dollars in Millions</i>	<u>Amount Expended as of December 31, 2016⁷</u>	<u>Estimated Amount Expended as of June 30, 2017⁷</u>
Private Equity Contributions	2.5	2.5
Federal TIFIA Loan	46.4	97.4
Tax-Exempt Private Activity Bonds	100.0	100.0
NCDOT Funding for Construction	13.2	16.7
Total Sources of Funds	\$ 162.1	\$ 216.6

Construction progress is closely monitored by NCDOT, USDOT and the credit agencies that assigned ratings to the PABs and TIFIA Loan. On a quarterly basis, a technical advisor approved by USDOT (currently Ove Arup & Partners P.C.) reviews and confirms the information provided by the Private Partner in monthly construction progress reports. Figure 2 below shows the reported construction progress as of May 31, 2017.⁸

Figure 2: Construction Progress Summary as of May 31, 2017



⁷ The amounts for long-term debt are shown net of unamortized premium and deferred financing costs.

⁸ Posted July 14, 2017, on the Electronic Municipal Market Access (EMMA) website operated by the Municipal Securities Rulemaking Board (MSRB): <https://emma.msrb.org/EP1016353-EP787850-EP1189518.pdf>

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Table 6 shows key schedule milestone dates as of November 2015 and May 2017. The Private Partner is liable for liquidated damages if a final acceptance date or the final completion date, as may be amended, is not achieved. A certificate of final acceptance for a Project Section can be issued after various requirements specified in the CA, including completion of punch list items, have been satisfied. NCDOT will issue a certificate of final completion after all Project Sections have achieved final acceptance, the electronic toll collection system satisfies applicable requirements, and a complete set of the as-built record plans have been delivered.

NCDOT has the right to terminate the CA if the Private Partner fails to achieve substantial completion for all Project sections by the Long Stop Date (which can be extended in certain circumstances).

Table 6: Key Schedule Milestones

	Schedule as of November 2015 ⁹	Schedule as of May 31, 2017 ¹⁰
Commercial Close Date	June 26, 2014	June 26, 2014
NTP1	August 22, 2014	August 22, 2014
Financial Close	May 20, 2015	May 20, 2015
NTP2	May 28 2015	May 28 2015
North Section Final Acceptance Date	January 2, 2019	November 30, 2018
Central Section Final Acceptance Date	January 2, 2019	November 30, 2018
South Section Final Acceptance Date	January 7, 2019	February 18, 2019
Final Completion Date	July 5, 2019	September 25, 2019
Long Stop Date	August 28, 2020	November 16, 2020

⁹ Posted January 15, 2016, on the Electronic Municipal Market Access (EMMA) website operated by the Municipal Securities Rulemaking Board (MSRB): <https://emma.msrb.org/EP903148-EP699861-EP1101796.pdf>

¹⁰ Posted July 14, 2017, on the Electronic Municipal Market Access (EMMA) website operated by the Municipal Securities Rulemaking Board (MSRB): <https://emma.msrb.org/EP1016353-EP787850-EP1189518.pdf>

4. Risk Allocation Assessment

The discussion in this section of the report summarizes Mercator's high-level assessment of the allocation of risk between NCDOT and the Private Partner under the CA. A P3 provides "value for money" when a public agency is able to transfer risks that it typically retains under a conventional project delivery approach to a private partner in a cost-effective manner.

It is important to note that the risk allocation in the CA was determined before the final RFP was issued. During the procurement phase, NCDOT solicited input from the pre-qualified bidders on drafts of the CA and the technical requirements for the Express Lanes Project. Many requests and suggestions were not incorporated into the final RFP documents, such as NCDOT providing more than \$170 million in public funding in addition to the \$75 million DRAM. As a result, NCDOT was able to maintain a level playing field among the potential bidders and the one bidder who submitted a responsive proposal did not have any leverage to seek material changes to the agreement.

4.1 Comparable Express Lanes Projects

The key project risks can be divided into the following broad categories: traffic and revenue, project financing, design and construction, and operations and maintenance. To facilitate the assessment, the risk allocation approach taken by NCDOT in each category is compared to the approach adopted by other state departments of transportation on similar P3 projects in the U.S. where private investors assume the revenue risk associated with variably priced toll lanes. Relevant information about the projects included in that peer group is provided in Table 7.

Table 7: Comparable P3 Express Lanes Projects with Revenue Risk

Project	State	Private Partner	Approx. Lane Miles Tolled	Financial Close	Concession Term (years)	End of Term
I-77 Express Lanes	NC	Cintra	94	2015	50 *	2068
495 Express Lanes	VA	Transurban	60	2007	80 **	2087
North Tarrant Express Lanes (1 and 2A)	TX	Cintra	53	2009	52 **	2061
LBJ TEXpress Lanes (IH-635)	TX	Cintra	60	2010	52 **	2061
95 Express Lanes	VA	Transurban	70	2012	73 *	2087
North Tarrant Express Lanes (3A and 3B)	TX	Cintra	41	2013	52 **	2061
US 36 Managed Lanes (Phase 2)	CO	Plenary	45	2014	50 *	2065
SH-288 Toll Lanes	TX	ACS	41	2016	52 **	2068

* From commencement of operations

** From execution of agreement

4.2 Traffic and Revenue Risk

Many private developers operating in the United States are reluctant to pursue P3 opportunities for new (“greenfield”) toll projects if the private investors are required to bear all of the traffic and revenue risk. As a result, public agencies have explored a number of strategies to mitigate toll revenue risk to encourage more robust competition for P3s and to reduce the cost of private financing.

One approach is to structure an “availability payment” concession in which the public agency receives the toll revenue generated by the project and makes payments to the private partner based on the availability of the toll facility to the public and the performance of the private operator. If project revenues are not sufficient to cover the required payments, the public agency must draw on other available transportation funding or seek general fund appropriations.

An availability payment approach would have been very risky for NCDOT given the credit profile for the Express Lanes Project. Tolling and dynamic pricing are being introduced to a service area without any existing toll facilities and the traffic congestion in the North I-77 corridor primarily occurs in the peak commuting hours which means the express lanes may be particularly vulnerable to traffic declines during economic downturns. Given the uncertainty associated with the traffic and revenue forecast, it would have been difficult to limit NCDOT’s potential financial liability, and the risk to taxpayers, under an availability payment approach.

Other state transportation agencies have reduced the cost to transfer revenue risk by providing a longer period of time for private investors to recover their investment and/or by reducing the amount of private financing required. Those options were not available to NCDOT because the term of the P3 agreement is limited to 50 years after completion of construction under North Carolina law and the total amount of upfront public funding available for the Express Lanes Project was capped at \$170 million. In order to work within these constraints to facilitate the project financing, NCDOT and its advisors developed a revenue risk sharing mechanism called the Developer Ratio Adjustment Mechanism (DRAM) that provides funding for certain financial obligations under circumstances specified in the CA. NCDOT also agreed to share the potential revenue risk associated with an unplanned competing limited access lane being constructed in the Project right-of-way. These two risk sharing provisions are discussed in more detail below.

Contingent Financial Support

The DRAM is \$75 million of contingent public funding that can be drawn after substantial completion of the Express Lanes Project. The Private Partner can request up to \$12 million per year from NCDOT if the projected annual net revenue after payment of operating expenses is not sufficient to pay scheduled debt service on the PABs and the TIFIA loan. The DRAM is available until the earlier of the final maturity of the TIFIA loan (currently June 30, 2053) or the date the Project debt is refinanced, with exceptions for certain types of refinancings.

The DRAM does not guarantee or enhance the potential return on the private equity invested in the Express Lanes Project. The primary beneficiaries of the DRAM are the investors who purchased \$100 million of tax-exempt private activity bonds (PABs) and USDOT, the lender for the \$189 million TIFIA loan. The limited credit support provided by NCDOT helped to secure long-term debt financing at

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relatively low rates which lowered the amount of upfront public investment. In addition, the participation of USDOT as a lender provides additional resources for project oversight.

Another benefit of the DRAM, from NCDOT's perspective, is that it provides certainty with regard to the maximum amount of public funding that can be drawn each year and in total during operation of the express lanes. Alternative revenue risk sharing arrangements for express lanes developed by other state departments of transportation are not typically capped. The Virginia Department of Transportation (VDOT), for example, agreed to compensate the private partner for the 95 Express Lanes if the number of HOV-3 vehicles using the express lanes exceeds certain thresholds over specified periods of time during the first forty years of the concession. The Texas Department of Transportation (TxDOT) reimburses the private partner for the LBJ and NTE TEXpress lanes for providing discounts to valid HOV vehicles and motorcycles during peak hours. The private operator is required to provide an HOV discount, which is currently 50% of the base toll rate and applies to HOV2+ vehicles, until December 31, 2024, unless TxDOT ends the program sooner.

Compensation for loss of toll revenue attributable to future improvements

Under the CA, the Private Partner is permitted to seek compensation from NCDOT for lost toll revenue and/or increased costs attributable to certain transportation improvements (defined as Unplanned Revenue Impacting Facilities) that are built and opened to traffic during the term of the agreement. NCDOT can also seek compensation from the Private Partner for improvements that have a net positive financial impact by increasing toll revenue or lowering operating and maintenance costs incurred by the Private Partner.

In order to seek compensation for an Unplanned Revenue Impacting Facility, the Private Partner must deliver a timely notice of claim and then submit a traffic and revenue study and other supporting analysis that shows actual and/or projected toll revenue with and without the Unplanned Revenue Impacting Facility. The parties can engage and share the cost of a neutral facilitator to assist with the negotiations or use the dispute resolution procedures established in the CA to resolve any dispute as to whether the Private Party is entitled to any compensation and the amount thereof.

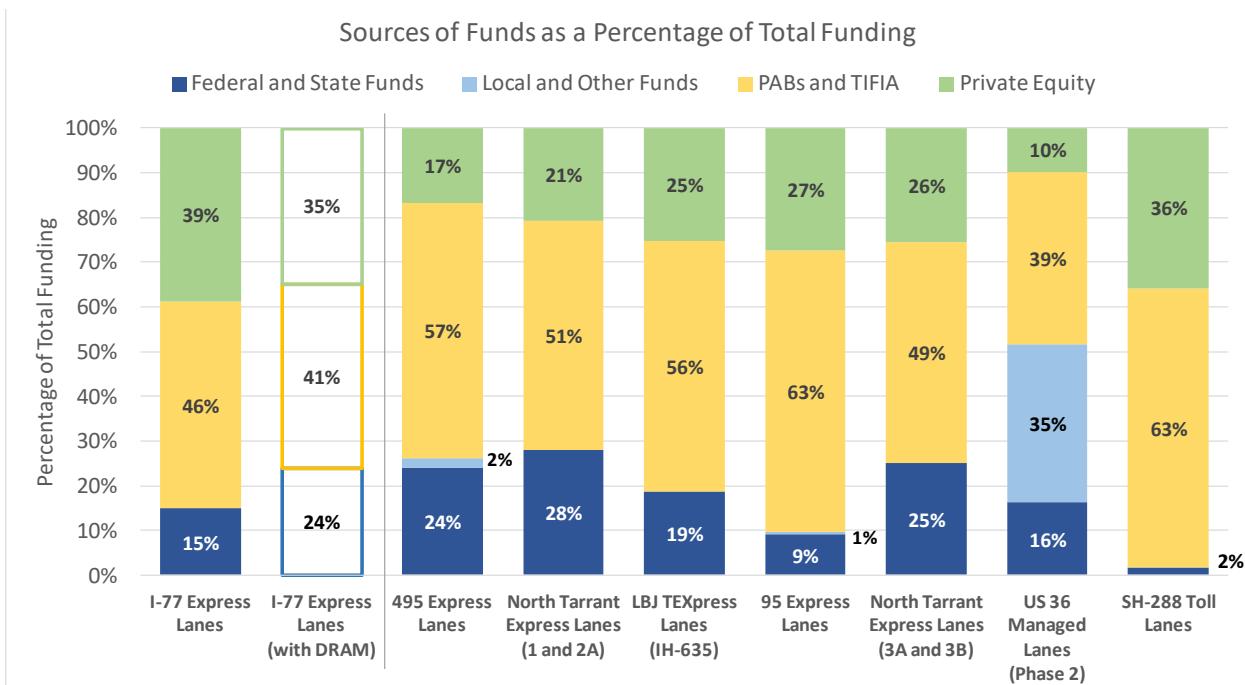
It is important to note that the Private Partner has irrevocably waived any right to seek injunctive relief or to pursue any action to prohibit or interfere with the development of transportation improvements in the I-77 corridor. The Private Partner's sole remedy is to seek compensation, and any payment is contingent upon and subject to the appropriation, allocation and availability of funds to NCDOT.

Monetary compensation for toll revenue losses incurred as a result of unplanned improvements is a common provision in the P3 agreements for the peer group projects. The terms and conditions can vary depending on the likelihood of unplanned improvements and the potential impact on express lanes revenue. Under the CA for the 495 Express Lanes, for example, VDOT does not have to pay any damages if it builds additional general purpose lanes or express lanes after the private partner has achieved a specified rate of return.

4.3 Project Financing Risks

As shown in Figure 3, the projects in the peer group have a similar mix of public and private funding. In each case, the private partner was solely responsible for securing the financing, but the state departments of transportation provided assistance with regard to obtaining TIFIA and issuing PABs. In addition, the states shared the risk of changes to certain financing assumptions that were beyond the control of the private partner.

Figure 3: Funding of Comparable P3 Projects



The provisions in the CA for the Express Lanes Project are fairly standard and appropriate. NCDOT agreed to bear the risk, and receive the benefit, of certain changes in market interest rates, fluctuations in credit spreads (pricing) of the PABs, inflation in materials and labor rates, and certain material changes to the TIFIA term sheet included in the RFP. Provisions in the CA detailed the termination remedies and other options available to the Private Partner and NCDOT if those risks resulted in the Public Funds Amount exceeding \$170 million.

The CA also provided for extensions of the project financing deadline under certain circumstances and included a process for securing competitive financing if certain funding commitments had expired before financial close was achieved.

4.4 Design and Construction Risks

No significant design or construction challenges were identified during the cost estimate review for the Express Lanes Project conducted by FHWA and NCDOT in September 2013 or the more detailed

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technical due diligence review conducted in 2015 on behalf of investors and the rating agencies. The risk profile for the Express Lanes Project reflects the fact that most of the construction work will occur within the median of I-77. In addition, the bridges and other structures that have to be built, replaced or widened do not present any unusual technical challenges.

As with every construction project, maintenance of traffic along the I-77 corridor and work zone safety are major concerns. Under the CA, the Private Partner is required to develop and update a detailed plan for construction staging and traffic management. NCDOT has the right to issue directive letters to the Private Partner regarding traffic management and control without incurring any obligation or liability. In addition, liquidated damages can be assessed for failing to comply with the applicable time restrictions related to lane closures and road closures set forth in the CA.

The Private Partner has transferred most of the design and construction risk to Sugar Creek Construction LLC (the Design-Build Contractor), a joint venture between Ferrovial Agromán Southeast, LLC (70%) and W.C. English Incorporated (30%) with Louis Berger Group, Inc. serving as the lead design firm. The contractual obligations of the Design-Build Contractor under the \$444 million fixed-price, date-certain agreement with the Private Partner are supported by joint and several parent company guarantees, subject to a maximum aggregate liability cap equal to 50% of the design-build contract price. A performance bond has been posted that covers 50% of the contract price and the payment bond covers 100% of the contract price.

The construction performance security required for some of the peer group projects includes a performance bond equal to 100% of the contract price, but the costs and benefits of a higher level of bonding can vary depending on the credit strength of the design-build contractor and the complexity of the work. The technical due diligence conducted on behalf of the investors for the Express Lanes Project, for example, included an analysis of the maximum probable loss if the contractor defaulted and had to be replaced at different points during construction. The analysis indicated a maximum aggregate liability of 18% of the contract price at an 80% confidence level, which is well below the 50% liability cap associated with the parent guarantees.

Key risks that have been retained by the Private Partner and not transferred to the Design-Build Contractor include right-of-way acquisition, the installation and integration of the electronic toll collection system, and operation and maintenance (O&M) of existing infrastructure during construction. Those risks are described in more detail below.

Right-of-Way Acquisition

The Private Partner is responsible for making necessary right-of-way available to the Design-Build Contractor. Since the majority of the Express Lanes Project will be constructed within existing NCDOT rights of way, the proposed property acquisition is relatively small and primarily involves locations where the existing median width is insufficient to accommodate the full width of the roadway and locations where noise walls and drainage will be constructed. The total required right-of-way was reduced from 63 to 28 parcels during final design.

The Private Partner is responsible for all costs and expenses associated with right-of-way acquisition, but NCDOT has agreed to share the risk should total right-of-way acquisition costs exceed the \$5.40 million

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baseline allowance. NCDOT will be responsible for 50% of the incremental cost up to \$6.48 million (120% of the baseline) and all right-of-way acquisition costs above \$6.48 million. If total right-of-way acquisition costs are less than \$5.40 million, the Private Partner will pay NCDOT 50% of the first \$1.08 million of savings (20% of the baseline) and 100% of any savings above \$1.08 million. This risk sharing approach is reasonable given the relatively low cost to acquire the necessary property.

Electronic Toll Collection System

The Private Partner has retained responsibility for the design, installation or integration of the electronic toll collection system and the Intelligent Transportation Systems (ITS) and communications equipment. That work will not be the responsibility of the Design-Build Contractor. It will be subcontracted to affiliates of the Private Partner with relevant expertise and experience. Risks associated with the design and installation system and compliance with the detailed performance requirements in the CA are mitigated in part by the posting of payment and performance bonds equal to 50% of the subcontract.

O&M during Construction

The Private Partner will assume responsibility for the operation and maintenance of all NCDOT-owned assets within the existing project right-of-way on October 1, 2017. That work will not be the responsibility of the Design-Build Contractor. The Private Partner will be required to meet minimum performance requirements specified in the CA.

4.5 Risks associated with Operations, Maintenance and Rehabilitation

Under the CA, the Private Partner is responsible for the operation, maintenance and renewal of the express lanes and routine maintenance of the general purpose lanes and adjacent assets such as guardrails, barriers, fences and signs. It has a strong financial incentive to minimize life-cycle costs and optimize operating performance. In addition, the Private Partner is subject to increased monitoring and liquidated damages in certain circumstances if it does not comply with the performance standards in the CA or if there are lane or road closures that are not permitted under the CA. At the end of the 50-year term, all assets, structures, systems, and equipment must meet detailed handback requirements specified in the CA, including minimum residual life requirements.

All of the P3 agreements for the peer group incorporate performance standards that allow the private partner to make decisions on the materials and methods to be used to meet its obligations with regard to operation, maintenance, and handback requirements. The nature of those obligations varies depending on the size and complexity of the project and the resources available to the state department of transportation. NCDOT, for example, will pay the Private Partner a fixed annual payment with annual escalation (based on the consumer price index) for maintenance of the general purposes lanes and adjacent assets. That decision reflects the fact that NCDOT has experience with performance-based interstate maintenance contracts. NCDOT reserves the right however to take back responsibility for maintenance of general purpose lanes after the first five years of operation.

NCDOT determined that it was more cost-effective to retain responsibility for major capital rehabilitation work on the general purpose lanes and on certain overpasses along the I-77 corridor. NCDOT also retained responsibility for performing winter maintenance activities, such as snow and ice

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removal, on the general purpose and express lanes, but unlike some other states, does not require the private partner to pay for those services.

The RFP for the Express Lanes Project specified that all proposers would be required to use NCDOT (acting through the NCTA) for certain electronic toll collection (ETC) and back-office services, including establishing and operating a central clearing house for customer accounts and a customer service center. Detailed business policies and procedures for the ETC services are provided in the CA, including provisions to ensure the toll accounts and travel records of express lane users are treated as confidential information in accordance with applicable laws.

NCTA will process transaction data received from the Private Partner and manage and distribute transponder inventory. The Private Partner will pay transaction fees to NCTA based upon the number and type of transactions processed and will pay any associated fees charged by financial institutions, toll agencies in other states, the Department of Motor Vehicles, or collection agencies.

The decision to have a public toll agency provide certain back office toll processing services to the private partner is consistent with the approach used on similar express lanes projects in Virginia, Texas and Colorado. However there are significant implementation challenges associated with these types of arrangements. A performance audit of U.S. 36 Managed Lanes project in Colorado conducted in March 2015, for example, cited inadequate evaluation of toll service costs and technical requirements as a contributing factor to procurement and financing delays and the need for the Colorado DOT to assume certain risks regarding the cost of the toll collection services. The implementation risks associated with the ETC services for the Express Lanes Project are mitigated to some extent by the requirement under the CA that the Private Partner give NCDOT at least one year prior written notice before the anticipated date of substantial completion of the first Project section so that NCTA can finalize the plans for required interface work, testing and system monitoring.

5. Public and Stakeholder Input

Although there is broad consensus about the need to address traffic congestion on I-77 north of Charlotte, there is significant debate about the relative merits of building express lanes versus constructing additional general purpose lanes, particularly in the North Section. In addition there is disagreement as to whether engaging a private consortium to finance, build, operate and maintain express lanes over a 50-year period is in the public interest.

To ensure that the issues of most concern to the public are evaluated as part of this review, NCDOT created a comment form on the Express Lanes Project website in April 2017. Other sources of information for this task include:

- minutes from relevant CRTPO and Technical Coordinating Committee (TCC) meetings,
- comments and questions from CRTPO member jurisdictions sent to NCDOT in early 2016,
- information and commentary posted on wideni77.org, i77businessplan.com, fix77now.blogspot.com, and other websites,
- documents filed in connection with the Widen I-77 lawsuit, and
- relevant news articles and media reports over the last six years.

The discussion below provides representative examples of the public comments and highlights frequent concerns and questions about the Express Lanes Project and the CA.

5.1 Public Comments Submitted to NCDOT Website

As of July 25, 2017, 263 comments had been submitted using the form created on the Express Lanes Project website. A copy of all the comments is included as an appendix to this report. Some of the more detailed submissions are provided below.

Note: The comments have not been edited, but names have been redacted. Some submissions may contain language that some may consider to be inappropriate.

I live in Mooresville. Because of Lake Norman, there are few alternatives to I-77 when traveling north/south, so I-77 becomes our local "street" by necessity. The 50-year Cintra deal will effectively keep more desperately needed public access lanes from being built, either due to penalty costs or lack of room beneath all the overpasses. So we are being "taken hostage" and forced to pay a ransom for 50 years! Also, the major areas for slowdowns on I-77 is at the on-ramps, where the merging is occurring. The proposed toll road configuration greatly magnifies that problem, with at least 8 more points of merges going southbound. And those cars aren't just merging, they are likely trying to cross over within a limited distance to be able to get to an existing I-77 exit ramp. Besides the intensified congestion this will inflict on non-toll lane users, the merge/lane change chaos will unavoidably result in more accidents, injuries and deaths. What a bargain!

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When our family chose to move to the Lake Norman area I checked the transportation plans on the books for this area. Widening of I-77 with general purpose lanes was in the STIP and the North Line Commuter rail was touted as next in line to be built by CATS. Lake Norman towns adopted land use planning consistent with transit oriented development and population surged by over 500%.

There have been a series of events where Lake Norman / North Mecklenburg continues to get "passed" over and over when the area is due for investment in infrastructure based on highway tax and transit tax we have been paying for years. CSX negotiations stalled, and commuter rail has been DOA. The financial crisis hit and NCDOT painted gloom projections of being able to widen I-77 as planned.

When the CRTPO conceded to the express lane plans, it was choosing between that or nothing. Conditions have changed since then including STI law in which this project was never scored. While some highways have congestion during peak seasonal travel, this interstate is congested DAILY. The economic, environmental, and most importantly user impact of the worst congested corridor in our state has never been adequately considered.

Furthermore, when CRTPO under a Charlotte dominated vote approved a managed lanes strategy, they had everything to gain with the majority of infrastructure INSIDE their limits funded by commuters OUTSIDE of their jurisdiction. Affected tax and toll payers were not adequately represented in this decision. Additionally, in talking with CRTPO planners, they never intended for the contract to be structured as it was, locking in a 50 year contract with a foreign entity in which we would owe compensation for any improvements over the life and consider it a bait and switch in implementation.

I also have concerns that this project has not considered the impacts of intermodal and freight connectivity which do not receive additional capacity for 50 years as well as potential integration of driverless or technology assisted vehicles. Tractor trailers represent a majority of vehicles stuck in congestion on a daily basis which will continue to block access to ingress / exits even for express lane users.

I am concerned about several things with respect to the I-77 Express Lane project. I do not have confidence in the Developer and their long term (50 year) contract to provide maintenance & restrict further expansion on our highway. Their financial history also is of concern. I am also concerned that our main Charlotte thoroughfare is going to be costly on which to travel. As I-85 and other major highways in other major cities are, we should at least have 4 FREE lanes on each side through Greater Charlotte. Lastly, citizens are uninformed of the cost of a vehicle travelling the express lanes. Therefore, there are many estimates being shared/guessed that are incredibly expensive. This lack of knowledge heightens the anxiousness about the project.

The problem with the contract, in my view, is that the company has not been required to declare tolls. No one knows what they will charge. Without that information, there is no way to assess whether the project serves the public interest.

My personal objection to the toll lanes is fairness. My tax dollars have been used to expand I-85 in Charlotte, a road that I rarely use. When I-77 needed expansion, the vehicle is toll lanes which are paid for only by those of us who use them. Not fair.

Currently I-77 between Charlotte and LKN has an HOV lane that my wife and I can use for free (free for 2 or more vehicle occupants). These lanes were built with federal and state dollars. Now

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those same lanes are being converted to toll lanes or HOV (free for 3 or more). It seems to me that the change from "free for 2" to "free for 3" is taking an existing right, already paid for with federal and state dollars, and converting it to a profit making right for the toll road builder/operator.

Please explain to me why these existing HOV lanes should not remain "free for 2"? It seems that this existing HOV lane is a public asset being converted to a profit making asset of a private entity.

I'm fine with having toll lanes from south of Huntersville (exit 19) down to Charlotte. This makes total sense because there are plenty of free lanes to use also. However it makes no sense to have toll lanes from Huntersville north to Mooresville, especially when only one lane is being added. This will not solve any problems with traffic because there will still be tons of backups with people trying to get on the highways and then trying to get over to the toll lanes. Also if there is an accident on the toll lanes north of exit 28 then everyone is paying to just sit in traffic, since there is only one lane and no way to go around it until the accident is completely cleared. This also poses a major safety risk having only one lane and small shoulders on the sides, especially crossing the two causeways. How do you expect emergency vehicles to get by if there is a major accident. As of today I drive by at least 2-3 accidents on my way to work and back each week, and that's just what I see. As I stated toll lanes between Exit 19 and Exit 36 are a bad decision, but I do support the toll lanes south from Exit 19 to Exit 11 in Charlotte.

All interstate highways in NC should have a minimum of 3 general purpose lanes in each direction BEFORE toll/hot lanes are considered. The current (non) 'solution' under construction is not sustainable, will inevitably fail, and is nothing more than a revenue generator. The notion of 'choice' is a farce. The real choice is pay tolls if you can afford it or move to the I-85 corridor which seems to get all the GP lanes. Also, safety is a major concern. It is no wonder there are accidents every day with terrible pavement conditions temporary barrier walls on both sides with lanes ending/merge (e.g. NB @ I-85).

I am strongly opposed to the expansion of I-77 using toll lanes and especially the current Cintra contract. I commute on I-77 from Mooresville to Charlotte everyday and I think the highway should be widened using general purpose lanes. I am willing to wait for that to happen rather than make a huge mistake by allowing Cintra to control our traffic flow for 50 years. I urge you to cancel the Cintra contract and widen i-77 with general purpose lanes.

There are many reasons I object to the current Cintra contract:

- Our community pays taxes to support road improvements. We should receive the benefit of those tax dollars by having i-77 widened without the additional "tax" of tolls. The Lake Norman community was blackmailed into accepting tolls by being told there were no other options. In fact, if congestion was taken into account for funding allocation i-77 widening with general purpose lanes would be prioritized.
- The Cintra toll road plan does not, in fact, solve the congestion issue. It is stated that the goal is not to solve congestion with a target speed of 45 miles per hour. This is unacceptable.
- The new lanes are not be constructed with adequate material to support tractor trailer traffic. This is unacceptable. When the state has to take over the road it should have the option to allow 18 wheelers on the lanes. This should not be allowed. Cintra should be required to meet the highest construction standards to allow for all future contingencies.
- The 50 year prohibition on expanding side-roads is unacceptable. Why would the state allow Cintra to dictate road construction needs for 50 years. The Lake Norman area is growing rapidly and will need further road expansion. As we speak a huge development is being debated on Hwy

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115 in Mooresville. This development can not be supported without road expansion. This will cripple the Lake Norman area in gridlock.

- Cintra has a track record of failed projects. Our community can not support the economics of a toll road and this project will most likely go bankrupt. Why should we send our money to a Spanish company rather than support our communities.

I can not afford to pay to ride in tolls on a daily basis and I shouldn't have to. I-77 should be widened with general purpose lanes. Please cancel the contract immediately

As someone who travels I-77 everyday from exit 28 to uptown Charlotte and back, I am a HUGE supporter of the express lanes and can't wait for them to be open. The project will help the everyday commuter, particularly parents, who need a predictable commute time for picking up children, getting to school and sports events, etc.. Parents with demanding schedules are willing to pay a little more to make sure we get where we need to be on time! With that said, I have a few concerns about the how the governance and oversight of Centra and Mobility Partners (MP) will work post construction. I think NC gov't should have some sort of commission or oversight body that approves on a set frequency what Centra/MP can charge. Similar to a utilities commission. Also, it is unclear to me what recourse the state will have if Centra/MB fails to maintain proper condition of 77, or what legal recourse Centra/MP will have to pursue those who do not pay after driving on the lanes. Can they take them to court, sue them, place a lien on property, etc...? If there is no clear recourse, people will abuse the lanes. If Centra/MB can go after toll-dogers, will the burden of this fall on the state? Would already crowded traffic courts become over-crowded. Enforceability is not popular to discuss, but I would appreciate more information on this.

The toll road is a bad deal. Adding the toll lanes will not reduce the traffic gridlock that occurs seven days a week on I-77 between the I-485 interchange and exit 36. It will only try to guarantee a travel time in exchange for money. Adding more general purpose lanes will have a significant impact in reducing the traffic bottleneck. The toll lanes will not accommodate tractor trailer traffic which means that nearly a third of the traffic will not be able use the new lanes. The residents (tax payers) of North Mecklenburg County will receive little to no benefit from the toll lanes while being on the hook for the revenue shortfall of this project. The worst part is that it will be this way for the next 50 years. I cannot imagine how this contract was signed by any reasonable person. How does anyone with a conscious lock this region into complete gridlock for 50 years?! 50 Years!! Local business suffer, our quality of life suffers because of the time wasted sitting in traffic. We have no way out.

Collectively we spoke our mind but it was ignored and the contract was signed. Voter backlash was swift and will continue. These toll lanes represent the exact reason people are worn out with politics and politicians. By the people, for the people died and is buried under the toll lanes. The least you can do for us (tax payers) is place a headstone at the entrance to the toll lanes that says "RIP Democracy".

In the mean time, take a trip up I-77 from uptown. It's dangerous! There are sudden lane shifts, uneven pavement and poorly marked lanes. The road condition is terrible and a complete safety hazard. Again, we have to absorb the cost of the increased wear and tear to our vehicles and increased travel times. I travel I-77 every day and I just sit in disbelief that our elected officials made a deal with a private entity that has no obligation to the citizens (tax payers) of this region but can use us a an ATM when they need money (profits). This whole deal should be investigated from top to bottom because I don't believe that reasonable people would have signed this contract. There had to be some incentive.

It's frustrating to see this go on and have no voice. If nothing changes from this review, well I have wasted a few minutes of my life offering my comments. Unfortunately, I have become accustomed to that from sitting in I-77 traffic.

5.2 Stakeholder Input

In February 2016, then Secretary of Transportation Nicholas J. Tennyson sent a request to the member jurisdictions of CRTPO to provide “a consolidated list of the specific aspects of the contract to which members of your body object.” The policy decision made in consultation with regional transportation planners to restrict the types of vehicles that could use the optional toll lanes was cited as an example of an issue that might benefit from additional review.

Several jurisdictions responded with suggestions and questions in March 2016, but NCDOT did not provide any formal response. A copy of the submissions is provided as an appendix to this report. In addition, many of the concerns expressed by the jurisdictions about the design and operation of the express lanes and certain provisions in the CA are highlighted below.

5.3 Frequently Expressed Questions and Concerns about the I-77 Express Lanes

The following discussion highlights several questions and concerns about the design and operation of the express lanes (in no particular order) and provides brief descriptions of applicable provisions in the CA and/or other relevant information.

How will the final location and number of access points to the express lanes be determined?

The general location for a minimum number of access points to the express lanes is specified in the CA, but the Private Partner determines the exact location during the final design process and it can add additional entrances (ingress) and exits (egress) to the extent permitted by environmental approvals. The general concern expressed by some jurisdictions is that the Private Partner will focus solely on revenue generation and not consider the potential impacts on local mobility.

This concern is addressed in part by provisions in the CA that require the Private Developer to produce detailed traffic simulations and capacity analyses for any proposed change or modification to the access points. The information is submitted to NCDOT and applicable stakeholders for review and concurrence and the Private Partner must address any NCDOT and stakeholder comments included in such review.

Figure 4 shows the current design for the entry and exit points for the express lanes. Additional access was added in 2016 between Exit 23 and Exit 25, Exit 28 and Exit 30, and Exit 35 and Exit 36 after consultation with NCDOT and local planners.

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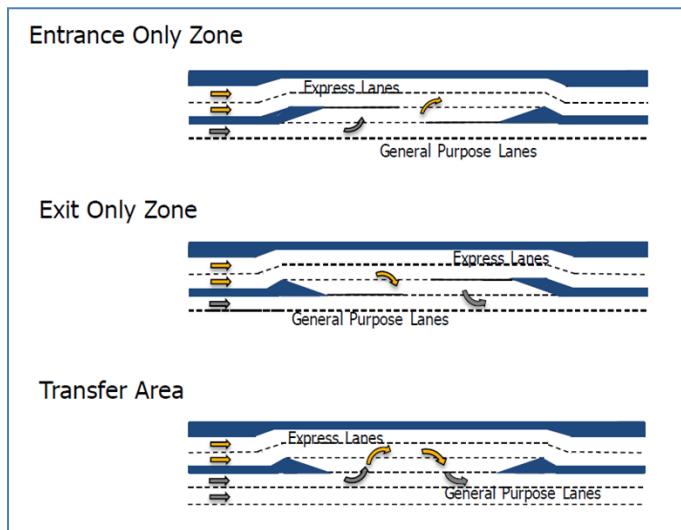
Figure 4: Express Lanes Access Points



Can drivers enter and exit the express lanes safely without weaving across the general purpose lanes?

Under the CA, the Private Partner is required to submit detailed traffic simulations to NCDOT that demonstrate the design of the express lanes access points as well as junction points for ramps and interchanges is safe and does not independently cause any adverse impact on the operating performance of the general purposes lanes. Figure 5 shows that the basic design of the express lanes includes adjacent merge and weave lanes approximately 2,000 feet long to facilitate safe crossovers.

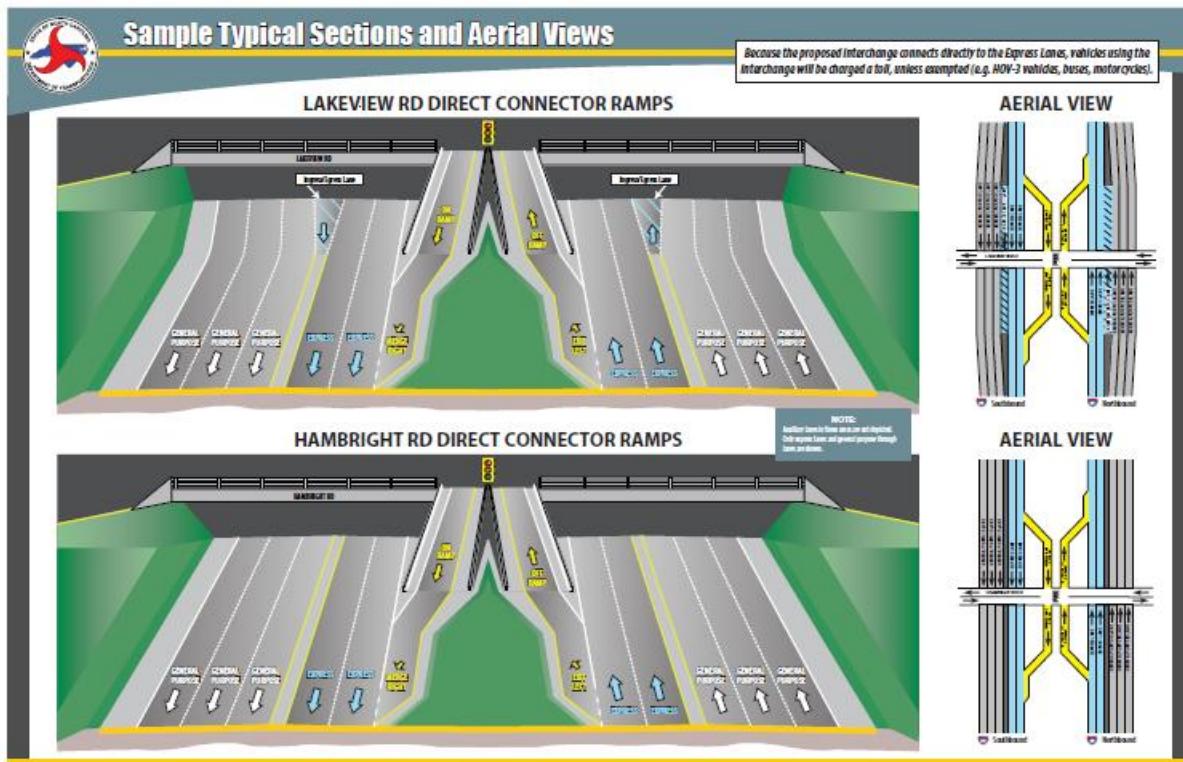
Figure 5: Design of Express Lanes Entry and Exit Points



The concern about weaving is also addressed in part by the decision made by the CRTPO in March 2015 to use a portion of the bonus allocation funding available for statewide mobility projects to build direct access interchanges for the express lanes.¹¹ The direct access eliminates the need for some drivers to merge from the general purpose lanes and may reduce traffic volumes at other nearby access points to I-77.

A categorical exclusion from NEPA review was obtained for the construction of direct connector interchanges at Lakeview Road and Hambright Road in July 2016. The new interchanges will replace existing bridges and add ramps that connect directly with the express lanes. Bicycle lanes and sidewalks are included on both sides of each bridge. Figure 6 shows the configuration of the direct connector ramps.

¹¹ The Strategic Transportation Investment legislation enacted in North Carolina in 2013 includes incentives for local transportation funding and highway tolling. Regions that commit local funds toward state projects or fund construction with proceeds of toll revenue bonds are eligible for “bonus allocation” funds.

Figure 6: Configuration of Direct Connector Ramps

Won't traffic conditions on NC 115 and US 21 worsen if the express lanes are built?

The concern is that the express lanes will not provide sufficient relief on the general purpose lanes and drivers will continue to divert to alternate routes, such as such as NC 115 and US 21.

Under the CA, the Private Partner is required to submit detailed traffic simulations and capacity analyses to NCDOT for the entire Project including roadways extending within, at a minimum, a half mile from the ROW limits and connecting to the Express Lanes Project. The traffic impacts (delay and queuing) on signalized intersections with access to or from the Express Lanes Project will be closely monitored and the data will be used to prioritize local improvements.

A list of 29 projects in the draft 2018-2027 TIP that will help address local mobility needs is provided as Appendix D. Table 8 shows the ten largest.

Table 8: Local Transportation Improvements in the TIP

Location	TIP#	Description	Construction Year	Est. Project Cost (\$millions)
Mooresville	R-2307B	Widen N.C. 150 from Greenwood Road to U.S. 21	FY2019	\$127.6
Huntersville	R-5721B	Widen N.C. 73 from Beatties Ford Road to West Catawba Avenue	FY2022	\$57.4
Mooresville	R-5100	Widen Williamson Road from I-77 to N.C. 150	FY2020	\$50.0
Mooresville	U-6037	Widen U.S. 21 from N.C. 150 to Medical Park Road	FY2024	\$35.1
Charlotte	U-5772	Widen N.C. 115 from I-485 to Harris Boulevard	FY2023	\$34.8

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Cornelius	R-2555B	Widen West Catawba Avenue from Jetton Road to N.C. 73	FY2020	\$31.7
Cornelius	U-5767	Widen U.S. 21 from Westmoreland Road to Northcross Center Ct	FY2021	\$23.8
Huntersville	U-5771	Widen U.S. 21 from Gilead Road to Holly Point Drive	FY2021	\$20.0
Huntersville	R-2632AB	Widen N.C. 73 from N.C. 115 to Davison-Concord Road	FY2022	\$19.8
Huntersville	I-5715	Improve Exit 25 (I-77/N.C. 73 interchange)	FY2020	\$18.0

Will right-of-way constraints prevent any future widening of I-77?

Construction of the express lanes will not preclude any future widening of I-77, but right-of-way constraints in certain areas could increase the total cost of such improvements. Challenges include the need to relocate existing businesses or residences in certain areas and the cost, time and uncertainty associated with the environmental studies required for any widening of the crossings over Lake Norman. Construction work in that area is within the Duke Energy hydroelectric project boundary area and also requires a permit from the Federal Energy Regulatory Commission.

Why are trucks prohibited from using the express lanes?

Many individuals and jurisdictions expressed concerns about trucks causing accidents and traffic backups in the general purposes lanes, particularly in those sections of I-77 with only two general purpose lanes in each direction.

The decision to restrict trucks from the I-77 express lanes is consistent with the operating policies established for other express lanes in the U.S. The standard adopted in the CA (only motor vehicles without trailers that are not larger than 20 feet in length, eight and a half feet in width and twelve feet in height) is used in another state; other express lanes have truck restrictions based on gross vehicle weight.

A study published by the Texas A&M Transportation Institute in July 2016 on issues associated with truck use of express lanes identified several reasons why heavy trucks are generally not permitted to use the lanes, including:

- *Safety*— On many express lane facilities, slower-moving trucks would have to access the express lanes from the left-most freeway lane which means they would have to interact with vehicles in the passing lane traveling at higher speeds.
- *Maintenance*— The express lanes may need to be closed more frequently for pavement repair and maintenance if truck traffic volumes are significant.
- *Roadway Design*— Express lane facilities that allow heavy trucks may require different designs for features such as the roadway and ramp curvature, underpass and overpass height, shoulder width, pavement thickness, and crash barriers.

Will the lower pavement standards for the express lanes preclude conversion to general purpose lanes?

The Technical Provisions in the CA include minimum requirements for pavement structure and thickness for the express lanes, but the final pavement design does incorporate several engineering assumptions and considerations, including projected average daily traffic, cumulative traffic loading, pavement material strength factors, and pavement design life. All pavement design and traffic forecasts are submitted to NCDOT for review and comment.

If a decision were to be made in the future to remove tolls and allow heavy trucks to use the lanes, the pavement likely would need to be rehabilitated more frequently or reconstructed. Alternatively, tolls could be removed without eliminating the prohibition on heavy trucks using the lanes.

Is the budget for landscaping and sound walls along the 26-mile corridor sufficient?

Under the CA, the Private Partner is required to work with NCDOT and local municipalities and to develop a plan for landscaping and structural aesthetics that establishes an overall, sustainable vision for the corridor. A committee of local representatives is prioritizing the use of their share (based on mileage along the corridor) of the initial \$2 million budget.

The Private Partner is also required to design and construct the sound barrier walls identified in the EA in compliance with the detailed specifications in the CA. Local jurisdictions have participated in the selection of the noise wall aesthetic features.

5.4 Frequently Expressed Questions and Concerns about the P3 Agreement

Following are questions (in no particular order) that are frequently asked about the public-private partnership agreement negotiated for the Express Lanes Project. The responses are intended to clarify the relevant provisions in the Comprehensive Agreement.

How much will it cost to terminate the Comprehensive Agreement?

The cost to terminate the CA would vary depending on how and when the CA is terminated. The discussion below describes the various circumstances that could result in a termination of the CA, outlines provisions associated with a termination for convenience, and provides an example of the potential cost to NCDOT if it terminated the CA for convenience.

Defaults that might trigger NCDOT termination rights

There are numerous events and conditions that qualify as a “developer default” under the CA, but only certain material defaults can trigger NCDOT termination rights if not cured within the applicable cure period available to the Private Partner and the collateral agent acting on behalf of the lenders (USDOT and the investors who own the PABs).

For example, NCDOT has the right to terminate the CA if the Private Partner fails to achieve substantial completion for all Project sections by the Long Stop Date (which can be extended in certain circumstances).

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A notice of termination can be delivered if NCDOT issues a warning notice for any of the circumstances outlined below and the default is not cured:

- failure to begin work after notice to proceed is issued;
- an abandonment of the Express Lanes Project;
- failure to make a material payment due NCDOT or to make a required deposit (subject to dispute resolution);
- any use of the Express Lanes Project in a manner that results in a material violation of the CA;
- any closure of a material portion of the Express Lanes Project (for more than 15 days) that is not expressly permitted in the CA or beyond the control of the Private Partner;
- any assignment or transfer of the Private Partner's interests in the Express Lanes Project in violation of the CA; and
- failure to deliver or fully comply with a remedial plan to address a persistent developer default (defined in terms of noncompliance points assessed over certain period of time).

If the CA is terminated prior to substantial completion of the Express Lanes Project for an uncured material default that was the subject of a warning notice, NCDOT is required to pay termination compensation in an amount that will generally be equal to 80 percent of the outstanding amount of debt (PABs and TIFIA Loan) with certain adjustments specified in the CA.

NCDOT has the right to terminate the CA without termination compensation if a voluntary or involuntary case involving I-77 Mobility Partners LLC seeking liquidation, reorganization or other relief under any bankruptcy, insolvency or similar law is commenced. However NCDOT has agreed pursuant to a direct agreement with the lenders to allow the collateral agent to remedy the situation by finding a qualified entity to step in with the Private Partner or to replace the Private Partner.

The discussion above does not include circumstances that would allow NCDOT to terminate the agreement for reasons not related to the performance of the Private Partner. An example of this would be a force majeure or other relief event that delays construction for more than 180 days or results in the Express Lanes Project becoming inoperable.

Termination for Convenience

Language in the CA states that NCDOT has the right to terminate the CA at any time "if NCDOT determines, in its sole discretion, that a termination is in NCDOT's best interest." The compensation due the Private Partner as a result of a Termination for Convenience after financial close is the greater of the following amounts:

- a. the appraised Fair Market Value of the Private Partner's interest (plus reimbursement of reasonable costs incurred by the Private Partner and its subcontractors to demobilize and certain other adjustments); and

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- b. the Senior Debt Termination Amount (plus reimbursement of reasonable costs incurred by the Private Partner and its subcontractors to demobilize and adjustments for others costs).

If the termination date occurs prior to substantial completion of the Express Lanes Project, the amount of capital that would reasonably be expected to be invested to achieve final completion is subtracted from the Fair Market Value estimate.

Under the CA, the Fair Market Value appraisal must be conducted by an independent third-party appraiser who is nationally recognized and experienced in appraising similar assets. If the parties are unable to agree on a single appraiser, NCDOT and the Private Partner will each select an appraiser and those appraisers will jointly appoint a third appraiser to conduct the appraisal. If necessary, the parties can petition the Wake County District Court to appoint the appraiser.

For a Termination for Convenience to be valid and effective, NCDOT must pay, in immediately available funds, the full amount of the termination compensation; but it can withhold an amount equal to the cost of any post-termination obligations of the Private Partner that have not been completed.

If NCDOT, for any reason, does not make the termination payment within one year after it receives the written report from the independent appraiser and other supporting documentation, NCDOT's Notice of Termination for Convenience will automatically expire and the parties' respective rights and obligations under the CA will continue as if no Notice of Termination for Convenience had been given.

If the Private Partner challenges the independent appraiser's determination of Fair Market Value, NCDOT must continue to operate and maintain the Express Lanes Project, or cause it to be operated and maintained, as a tolled facility until the disputed portion of the Termination Compensation is finally determined by settlement or final judgment and paid.

Illustrative Calculations of Termination for Convenience Cost to NCDOT

In January 2016, the Office of the North Carolina State Auditor released a report prepared by a subject matter expert that indicated the potential Fair Market Value as of October 31, 2015, might be approximately \$300 million based on a hypothetical scenario using a revenue forecast in the Project financial model and a limited review of available financial documents.¹² It does not appear that alternative project revenue assumptions were evaluated at that time and the analysis does not indicate whether the capital costs and investment reasonably expected to be incurred to achieve final completion had been considered as specified in the definition of Fair Market Value provided in the CA.

For purposes of this review, Mercator has prepared an illustrative example of the termination compensation that might have been payable by NCDOT if the CA had been terminated for convenience on December 31, 2016. That date was selected so that data from the most recent publicly available financial statements prepared for I-77 Mobility Partners LLC could be used.

The example is provided to highlight key variables in the termination compensation calculation that make it difficult to estimate with any certainty how an independent appraiser might determine Fair

¹² <http://www.ncauditor.net/EPSWeb/Reports/otherreports/i-77project.pdf>

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Market Value. The payments due upon a termination for convenience are not intended to be a penalty that discourages the public agency from exercising its termination rights. The complicated provisions for calculating the amounts due under different circumstances are designed to protect the interests of both NCDOT and the Private Partner.

One of the key assumptions in the Fair Market Value calculation is the projected net toll revenue that might be generated by the Express Lanes Project, as determined by an independent appraiser. Scenario A in our example uses net cash flow projections provided in the offering document for the PABs in May 2015 described as the “Equity Participant’s Advisor Projection of Traffic and Revenue.”

Scenario B assumes annual net cash flow that is 50% of the first scenario. The resulting amounts are comparable to the net cash flow described as the “Lender’s Advisor Base Case Projections of Traffic and Revenue” in the PABs offering document.

Scenario C assumes annual net cash flow that is 150% of the amounts used in the first scenario. It is appropriate to evaluate a scenario with much higher revenue because the Equity Participant’s Advisor Projection did not include any assumption for the additional revenue collected from customers who will be invoiced at a higher toll rate through the Bill by Mail program (video tolling by license plate recognition).

Another key assumption in the Fair Market Value calculation is the weighted average cost of capital (WACC), also determined by an independent appraiser. The WACC depends on financial modeling assumptions about returns on invested capital. In our example the net cash flow is discounted at an assumed WACC of 11 percent for Scenario A, 9 percent for Scenario B and 13 percent for Scenario C. Other assumptions are based on data from the financial statements for the year ending December 31, 2016. At that point in time, approximately \$162 million had been expended for design and construction of the Express Lanes Project.

Table 9 on the next page shows the resulting Termination Compensation that would have been payable by NCDOT as of December 31, 2016, in each scenario. The estimated amounts exclude potential demobilization and other costs eligible for reimbursement, which could be significant depending on when a notice of termination is given. Supporting detail for each scenario in the example is provided as Appendix A.

Table 9: Illustrative Example of the Potential Termination Compensation as of December 31, 2016

Amounts in \$ Millions		Assumed Weighted Average Cost of Capital	[i] Fair Market Value Estimate as of 12/31/16 ¹³	[ii] Estimated Senior Debt Termination Amount as of 12/31/16 ¹⁴	Greater of i and ii Termination Compensation
<i>Scenario A</i>	Calculation with Equity Participant's Advisor Projection of Traffic and Revenue	11.00%	\$125	\$149	\$149
<i>Scenario B</i>	Calculation with 50% of Equity Participant's Advisor Projection of Traffic and Revenue	9.00%	(\$2)	\$149	\$149
<i>Scenario C</i>	Calculation with 150% of Equity Participant's Advisor Projection of Traffic and Revenue	13.00%	\$168	\$149	\$168

Under each of these hypothetical scenarios, the compensation paid to the Private Partner by NCDOT, together with available cash reserves pledged to the lenders, would have been sufficient to pay the total amount owed to USDOT, as lender for the TIFIA loan, and the holders of the tax-exempt PABs.

In the first two scenarios, the Private Partner would only have received reimbursement for demobilization and costs incurred as a result of the early termination. Those amounts paid would depend on the status of construction on the termination date and could total millions of dollars.

In Scenario C of the example, where it is assumed that the appraiser determines that the potential net toll revenue is substantially higher than the forecast shown in the financing documents, NCDOT would have paid an estimated \$168 million in termination compensation and the equity investors would have received approximately \$19 million after repayment of the PABs and the TIFIA loan (in addition to demobilization and certain other costs incurred). A higher weighted average cost of capital than the one assumed for purposes of this example would have decreased the estimated Fair Market Value and a lower cost of capital would have increased the Fair Market Value.

The range of amounts payable in the hypothetical scenarios are not indications of the potential cost to terminate the CA for convenience in the future. The example is provided to show that (1) the minimum amount payable as termination compensation would be the amount required to pay the outstanding project debt and (2) the Fair Market Value calculation could vary considerably depending on the key assumptions used by the independent appraiser.

¹³ Estimate does not include demobilization and other costs incurred by the Private Partner that would be reimbursed.

Can the term of the CA be shortened?

A Termination for Convenience is a unilateral action that can be taken to shorten the term of the CA. As described above, the Private Partner would be entitled to compensation.

Another option is to negotiate with the Private Partner and purchase its rights under the CA. If the express lanes will continue to be operated after the acquisition, it may be possible for an entity to assume the existing project debt and/or finance a portion of the acquisition by issuing additional debt secured by Project revenue. NCDOT or NCTA could operate the acquired toll facility or contract with a private operator.

What capacity expansions can be implemented without paying a penalty to the Private Partner?

Under the CA, the Private Partner can only seek compensation for a toll revenue loss attributable to the construction of “any limited access main lane of a highway that did not exist prior to the Effective Date, which NCDOT, or an entity pursuant to a contract with NCDOT and on NCDOT’s behalf, builds within the Airspace and opens to traffic during the Term...”

The effective date of the CA is June 26, 2014, and the defined term “Airspace” refers to property extending above and below the surface boundaries of the Project right-of-way (the existing right-of-way and real property acquired in the name of NCDOT for construction, operation and maintenance of the Express Lanes Project).

The definition for an Unplanned Revenue Impacting Facility that is subject to a compensation claim specifically excludes all transportation projects (whether funded or unfunded) included in various transportation plans as of March 31, 2014, the date the financial proposals were due. Those transportation plans included a project to construct one additional general purpose lane on I-77 in each direction between Exit 28 and Exit 42. The 2012-2018 TIP approved in 2011 included some funding for right-of-way and utilities in FY 2020 but no funds for construction of that project. In January 2014, CRTPO included the plan to widen I-77 in a list of projects submitted to NCDOT to be evaluated for priority funding. Given the possibility that the potential widening of I-77 might be accelerated, NCDOT amended the definition of Unplanned Revenue Impacting Facility prior to issuing the final RFP to specifically exclude construction of general purpose lanes between Exit 28 and Exit 36. The action was intended to mitigate the potential impact on the financial plans of the proposers by allowing them to seek compensation from NCDOT if the widening was expedited and had an adverse impact on express lane revenue.

The Private Partner cannot seek compensation for any transportation projects or facilities that are not specifically newly constructed limited access main lanes of a highway, including passenger rail and other modes of transportation. Highway projects necessary for improved safety, maintenance or operational purposes and improvements undertaken to increase traffic capacity in the corridor through the installation of intelligent transportation systems, through reconstructing existing lanes, through new full access frontage roads, or through the restriping of traffic lanes, medians and shoulders, are also not subject to any compensation claim.

What is the source of funding for payments to the Private Partner for unplanned revenue impacting facilities?

There is no specific source of funding for any compensation payments. NCDOT's authority to pay monetary obligations or expend state funds is generally subject to appropriation by the North Carolina General Assembly. As a result, compensation payments are contingent upon and subject to the appropriation, allocation and availability of funds to NCDOT.

Under the CA, the Private Partner has up to four years to make a claim for compensation (which may include both past and projected revenue losses). Any unresolved dispute regarding whether the Private Partner is entitled to any compensation and the amount thereof will be resolved according to the dispute resolution procedures in the CA. If NCDOT does not make any lump sum or periodic payment of a Compensation Amount when due, it bears interest at a floating rate until the amount due is paid.

Are taxpayers backstopping the toll revenue projections and guaranteeing a profit for the private investors?

On a non-recourse project financing, the private investors are secured solely by the revenues generated by the project and other assets pledged as collateral, such as cash reserves. The investors have no recourse to NCDOT or the Private Partner if toll revenue does not meet projections.

NCDOT is providing limited credit support for the project debt. Up to \$75 million of contingent public funding can be drawn after substantial completion of the Express Lanes Project. This Developer Ratio Adjustment Mechanism (DRAM) can only be used to pay operating expenses and debt service or to make required deposits to debt service reserve accounts.

The DRAM does not guarantee or enhance the potential return on the private equity invested in the Express Lanes Project. The primary beneficiaries of the DRAM are the U.S. investors who purchased the tax-exempt PABs and USDOT, the lender for the TIFIA loan. Providing limited credit support lowered the overall cost of financing which lowered the total public contribution required from NCDOT.

What are the ramifications and remedies if the Private Partner goes bankrupt?

If the Private Partner becomes involved in any bankruptcy or insolvency proceedings, default provisions under the CA and the financing documents will be triggered. The Private Partner has no right to notice or a cure period for such defaults, but NCDOT has agreed, pursuant to an agreement with the lenders (USDOT and the investors who own the PABs) to send written notice to the collateral agent acting on their behalf. The collateral agent will have up to 90 days after receiving the NCDOT notice to exercise the right to find a qualified entity to step in and back stop the obligations and performance of the Private Partner or to propose a qualified substitute for the Private Partner. The rights and obligations of all parties during the cure period are specified in the CA. If the lenders do not exercise their rights or NCDOT does not approve the proposed substitute, the CA can be terminated and the Private Partner will not be entitled to receive any compensation.

Similar lender protections are provided in the financing agreements for all P3 projects completed in the U.S. In the corporate world, assets can be liquidated to pay creditors. That is not the case with toll concessions where the primary asset of the private partner is the right to collect toll revenue for a specified period of time. The only way lenders can recover their investment is to ensure that the toll facility continues to be operated and maintained at the standards specified in the P3 agreement.

A relevant example of a toll project in the U.S. that was restructured after the private sponsor filed for bankruptcy is the South Bay Expressway (SBX) in San Diego, California.

SBX, formerly SR 125, was financed in 2003 for approximately \$658 million and it opened to traffic in 2007. In March 2010, SBX LP, the private concession company, filed for bankruptcy primarily because of litigation related to the construction, but the toll road was also underperforming.

A reorganization plan confirmed by a bankruptcy court in April 2011 settled the litigation with the construction contractor and established a new concession company (SBX LLC) under the ownership of the construction lenders, which included USDOT as the provider of a \$172 million TIFIA loan. After the reorganization, USDOT had a new \$93 million secured TIFIA loan with a senior lien on the SBX revenues and interest rates ranging between 6 percent and 14 percent (versus the 4.46 percent rate on the original TIFIA loan). USDOT also received approximately \$6 million of equity in the new company.

In 2011, the San Diego Association of Governments (SANDAG)—the metropolitan planning organization and transit agency and toll operator for the San Diego region—purchased the SBX and reduced toll rates. The commercial lenders were paid using local sales tax revenue and USDOT received a \$15 million cash distribution. A new TIFIA loan was issued with the same terms negotiated in the reorganization plan and USDOT may recover an amount equal to the original loan balance by 2042 when control of the SBX is scheduled to revert to Caltrans under the terms of the original P3 agreement.

The SBX example is similar to what occurred in Texas with the SH 130 project. Cintra and Zachry American Infrastructure (the SH 130 Concession Company) filed for Chapter 11 bankruptcy in March 2016. A steering committee of creditors, led by a private investment firm and USDOT, worked to develop and implement a reorganization plan for the project. In May 2017, a restructuring plan was approved by a bankruptcy court. Details of the restructuring plan have not been released, but it is reported that USDOT now owns 34 percent of a new company that will operate the toll road until 2062. Other classes of creditors and project stakeholders will receive cash distributions, new debt obligations or equity shares.

6. Key Findings and Observations

The discussion below highlights certain findings and observations drawn from Mercator's review of the CA, the P3 procurement process and input from the public and project stakeholders.

6.1 The Comprehensive Agreement is reasonable, but inconsistent public engagement has undermined confidence in the P3 project delivery approach.

Mercator believes that the overall allocation of key project risks under the CA is generally appropriate and consistent with the approach taken by other state departments of transportation on similar P3 projects. The CA provides incentives for the Private Partner to meet its obligations as well as effective remedies for potential non-performance.

Much of the public frustration with the Express Lanes Project can be attributed to the limited opportunity for public input during the project development period. NCDOT does not have a formal process for identifying and screening projects that are potential candidates for delivery under a P3. Subject to certain requirements under North Carolina law and oversight provisions in the P3 policy guidelines, NCDOT can initiate a P3 solicitation for any project that it determines satisfies various criteria related to public need, technical and financial feasibility, or project acceleration. Many members of the public did not learn that the Express Lanes Project was being developed as a P3 until after the procurement process was initiated.

The rationale for undertaking the P3 was frequently stated in terms of there being no other alternative. NCDOT estimated that it would cost over \$500 million to widen I-77 over the course of 15 to 20 years. Public agencies that focus on the ability of private financing to close a funding gap instead of risk transfer and other potential benefits of a P3 can be vulnerable to criticism when additional public resources are perceived to be available. In this case, the enactment of the Strategic Transportation Investments (STI) legislation in June 2013 made some hopeful that a widening of I-77 would be prioritized over the construction of express lanes that some believe will not provide congestion relief for drivers in the general purpose lanes. The Express Lanes Project, however, was scheduled to begin construction prior to July 1, 2015, and therefore it is a transition project that was not subject to scoring under the STI criteria.

When questions and concerns were raised about the P3 approach, the response from NCDOT was often inadequate. Members of the public frequently cite the fact that NCDOT did not provide any formal response to suggestions and questions submitted by local jurisdictions in early 2016 and it did not disclose any findings from a meeting with the Texas Department of Transportation held after the SH 130 Concession Company filed for bankruptcy protection.

Finally, safety issues along the 26-mile construction work zone for the Express Lanes Project, including an increase in the numbers of accidents and reports of debris in the roadway and dust clouds, have added to public concerns about the Express Lanes Project.

6.2 The planning process did not provide sufficient opportunities for the public to evaluate the relative merits of express lanes and alternatives without tolls.

Significant resources have been devoted to advancing the express lanes concept in the Charlotte region. Many individuals and organizations with concerns or questions about the application of the concept in the North I-77 corridor came to believe that the only way to advance alternative improvements, such as a widening of I-77, was to advocate for cancellation of the Express Lanes Project.

Efforts to implement variably-priced managed lanes in the North I-77 corridor reflect policy positions dating back to December 2001 when NCDOT published an I-77 Sub-Area Study Final Report.¹⁴ The purpose of that study was to develop alternatives to address existing and projected traffic volumes on North I-77 during peak commute periods. Though the alternatives such as constructing additional general purpose lanes were evaluated, the 2001 Sub-Area Study report focused on the need to develop congestion management strategies. The first page of the Executive Summary, for example, includes the following statement:

“No urban area has succeeded in curbing congestion with a roads-only strategy. New highway capacity generally only provides short-term relief - within three years or so, roads are again close to full capacity because new growth shifts to the improved corridors and commuters shift their travel back to the peak hour. Highway widening is a finite activity because of limited availability of land and significant negative impacts on adjoining homes or businesses.

There is a growing awareness in the Charlotte region that new approaches are needed to manage congestion. Residents of the region are beginning to understand that alternative transportation modes such as HOV lanes, light rail transit, or bus rapid transit provide reliable travel times as demand grows, in stark contrast to ever lengthening auto commute times as highway lanes become filled.”

One of the key recommendations in the 2001 Sub-Area Study was to create HOV lanes on North I-77 when the interstate was widened between I-85 and I-485. The recommendation was adopted and in December 2004, the first, and only, HOV lanes in North Carolina were opened.

Continued interest in and support for congestion management approaches was one of the reasons that local and state transportation agencies initiated the Charlotte Region *Fast Lanes* Study in 2007.¹⁵ The purpose of the study was to identify where HOV lanes, HOT lanes and truck-only toll (TOT) facilities might provide the most benefit. The North I-77 corridor was identified as the most promising of the twelve corridors analyzed.

Thereafter, opportunities to advance express lanes on I-77 were actively pursued. In 2009, the private developer for Augustalee, a major proposed mixed-use development in Cornelius, proposed to fund the widening on I-77 from four to six lanes from south of Exit 23 (Gilead Road) to Exit 28 (Catawba Avenue). MUMPO amended the STIP to include I-77 widening and stated its preference that the new I-77 lanes be

¹⁴ <http://www.crtpo.org/PDFs/I-77/I-77Sub-AreaStudyFinalReport.pdf>

¹⁵ <http://www.charmeck.org/fastlanes/home.htm>

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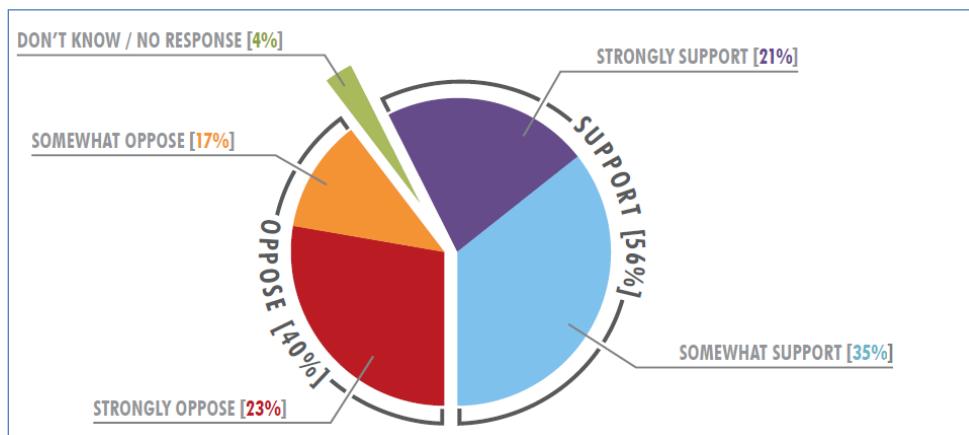
constructed as managed lanes.¹⁶ The Augustalee project subsequently went into foreclosure and attempts were made to secure public funds to construct express lanes on I-77.

After the P3 procurement process was initiated, an environmental assessment was prepared for the Express Lanes Project and the stated purpose and need was defined as providing “immediate travel time reliability along I-77 from Uptown Charlotte to the Lake Norman area.” The focus on “travel time reliability” precluded the examination of additional general purposes lanes. The only options examined in detail were scenarios that varied the number of the express lanes along certain sections of I-77. The traffic operational analysis for the environmental assessment focused on immediate relief in the opening year, which was assumed at that time to be 2017. The analysis therefore did not include data on the potential impact of express lanes (or additional general purpose lanes) on future traffic conditions in the corridor.

6.3 Public opinion reflects uncertainty about the express lanes concept.

There is a tendency to characterize public opinion as simply being for or against something. Figure 7 below, for example, is from the Phase III Result Summary for the Charlotte Region *Fast Lanes* Study completed in August 2012. The pie chart summarizes responses from over 900 telephone interviews conducted with residents from three areas in Mecklenburg and Union Counties. The *Fast Lanes* report states that approximately 56 percent of respondents favored the general concept of express toll lanes.

Figure 7: Public Opinion of Express Toll Lane Construction (2012 Charlotte Region *Fast Lanes* Study)



The 56 percent represents the 21 percent who expressed strong support and the 35 percent who were characterized as “somewhat” supporting the concept. By adding the groups that somewhat support (35%), somewhat oppose (17%) and don’t know (4%), one could also say that 56 percent of the respondents did not have a firm opinion and might be open to learning more about express toll lanes.

The uncertainty reflected in the opinion poll about express toll lanes is also evident in the public comments about the Express Lanes Project. Many people appear to be skeptical about the claims made

¹⁶ https://www.crpco.org/PDFs/Agenda_Minutes/2009/MPO_2009_04_Apr_Minutes.pdf

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by those for and against the express lanes and do not know where to find objective information. There clearly is a need for more effective public outreach and communication.

7. Policy Options Recommended for Consideration

The primary purpose of this review is to identify and evaluate potential policy options that might address questions and concerns expressed by members of the public regarding the express lanes concept and certain provisions in the CA.

Mercator has identified a range of options that could be considered by NCDOT, but additional time and resources would be required to generate cost estimates, to prepare traffic and revenue analyses and to conduct the necessary legal and other due diligence that would be required to implement any option.

For discussion purposes, the policy options recommended for consideration have been grouped into five general categories. The categories below are not listed in order of preference and they may not be mutually exclusive.

- a. Terminate the Comprehensive Agreement and complete the Express Lanes Project using public funding or financing as it becomes available.
- b. Terminate the Comprehensive Agreement and allow CRTPO to determine whether express lanes should remain in the transportation plan or be replaced or supplemented with other improvements based on available resources.
- c. Negotiate modifications to the project scope and/or the terms of the CA, such as:
 - Deferring or eliminating tolling of certain lanes,
 - Reducing the financial impact on frequent users,
 - Revising the truck restrictions to allow larger vehicles that can use the express lanes safely,
 - Encouraging greater use of the express lanes by allowing HOV-2 for some period of time, or
 - Modifying the compensation provisions for unplanned revenue impacting facilities.
- d. Work with CRTPO to identify and advance additional improvements to address mobility issues in the corridor.
- e. Develop preliminary plans to negotiate and finance the purchase of the Express Lanes Project after completion.

An initial evaluation of the potential policy rationale, key challenges, potential costs, implementation timeframe and relevant examples for each option is provided below.

7.1 Terminate the Comprehensive Agreement and complete the Express Lanes Project

Potential Policy Rationale

Mercator's recommendation that NCDOT consider a termination for convenience is not based on any particular concerns about the CA or the Express Lanes Project. We have not identified any risks to NCDOT or potential financial liabilities that cannot be managed if appropriate resources are provided for project oversight.

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A potential justification for terminating the CA and completing the Express Lanes Project with public funding or financing is the need to be responsive to concerns that continue to be expressed by elected officials at the local, county and state level about the P3 arrangement. It would be difficult to find a major construction project that does not have some opposition, but sustained resistance by public officials to a project under construction is somewhat unusual.

Key Challenges

Securing the public funds required to pay the termination compensation and to complete construction of the Express Lanes Project would be a significant challenge. Before issuing a notice of termination, it would be important for NCDOT to identify the likely source of funds for this option and to disclose the potential impact on other transportation projects and programs. If the Express Lanes Project is not completed using toll financing, for example, the bonus allocation funds the region has received under STI may be put at risk.

Potential Costs

The final termination payment would be determined by an independent appraiser, but the minimum is the amount needed to repay the outstanding PABs and TIFIA loan at the time of termination plus the demobilization costs and other expenses incurred by the Private Partner and its subcontractors. If the TIFIA loan has been fully drawn when the termination notice is given, the cost to pay the project debt will exceed \$289 million.

Other costs associated with the termination of the CA include the cost to stabilize the work zones along I-77 to ensure safe travel until construction is resumed and expenses for outside attorneys and other advisors with relevant expertise that are retained by NCDOT to assist with the termination.

The cost to complete construction of the Express Lanes Project will depend on the status of construction when the CA is terminated. Given corridor spending caps under STI, NCDOT will likely need to evaluate the viability of completing the express lanes in phases that are able to function on a stand-alone basis.

Implementation Timeframe

It is difficult to estimate the total amount of time required to complete a termination. The CA provides a process and timeframe for appointing the independent appraiser who will determine the fair market value for purposes of the termination compensation calculation, but the time frame for conducting the appraisal is not limited.

The time that would be needed to procure a contractor to complete construction of the Express Lanes Project is also uncertain.

Relevant Example

In June 2017, the Indiana Department of Transportation terminated the P3 agreement for the construction of approximately 21 miles of Interstate 69 after the private partner fell nearly two years behind schedule due to financial difficulties.

Settlement agreements were negotiated with the private companies involved in the project, the holders of tax-exempt PABs, and surety companies. Bondholders will be paid 100% of the outstanding principal plus accrued interest and a premium.

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The Indiana Finance Authority will issue \$246 million of highway revenue bonds to fund a portion of the bond redemption and to complete construction of the project, which is estimated to be approximately 60% complete.

7.2 Terminate the Comprehensive Agreement and the Express Lanes Project

Potential Policy Rationale

Under this option, NCDOT would terminate the CA and stop work on the Express Lanes Project. CRTPO would determine what improvements could be programmed for North I-77 through its annual planning and project prioritization process.

Key Challenges

CRTPO would need time and resources to assess the impacts on regional transportation plans, including the TIP and the air quality conformity determination report, if the Express Lanes Project is not constructed. Cancellation of the express lanes could also impact bonus allocation funding for the region under STI and plans for express bus service in the corridor.

Potential Costs

The cost to NCDOT will be the termination compensation, the demobilization expenses incurred by the Private Partner and its subcontractors, and the cost to stabilize the work zone along I-77.

At this conceptual stage of analysis, it is not possible to identify or quantify the potential impacts on local jurisdictions if the Express Lanes Project were cancelled.

Implementation Timeframe

The total amount of time that would be needed to terminate the CA is somewhat uncertain, but CRTPO could initiate its review before the termination is complete.

The timeframe to initiate and complete alternative projects along I-77 will depend on the required environmental review and availability of sufficient state and federal resources for construction.

Relevant Example

In April 2015, the Virginia Department of Transportation (VDOT) terminated the P3 agreement for the Route 460 Project after determining that it was unlikely the project could be completed as designed given significant environmental permitting issues.

Under the settlement agreement, the private partner agreed to return \$46 million of \$256 million paid by the state and cancelled its claim to an additional \$103 million under the contract. VDOT provided approximately \$50 million to redeem outstanding toll revenue bonds.

The Route 460 project was redesigned and a supplemental environmental impact statement was completed. The new project was scored and ranked under Virginia's project prioritization process in 2017 and did not qualify for state funding.

7.3 Negotiate modifications to the project scope and/or the terms of the CA

Potential Policy Rationale

Some of the concerns expressed by the public and local stakeholders might be addressed by modifying the project scope and/or the terms of the CA. NCDOT cannot make changes unilaterally, but it might be able to work with the Private Partner to identify modifications to the project scope or the CA that could help offset the cost of the potential changes. Outlined below are some concepts that might merit further consideration:

Eliminate tolling of certain lanes

Between Exit 23 and Exit 28, the Express Lanes Project will have two general purpose lanes and two express lanes in each direction. To address concerns that the new express lanes may not provide sufficient congestion relief in the existing general purpose lanes, it may be possible to modify the design and convert one of the express lanes in that section, or a portion of one express lane, to a general purpose lane.

Significant analysis would be required to determine if such a change is technically and financially feasible, including detailed traffic simulations and toll revenue analysis. The change may also impact the air quality conformity determination and/or require approval from the Federal Highway Administration. The cost of the design change could be reduced by maintaining the prohibition against heavy trucks using the new general purpose lane.

Reduce the financial impact on local residents by establishing frequent user discounts or toll credits

To address concerns of local residents who use I-77 frequently for relatively short trips, it may be possible to provide discounts or toll credits based on the number of trips over a certain time period.

Revise the truck restrictions to allow certain vehicles that can use the express lanes safely

The CA currently does not allow motor vehicles that are larger than 20 feet in length, eight and a half feet in width and twelve feet in height to use the express lanes. It may be possible to modify or replace that standard with one based on gross vehicle weight or other criteria that would permit access to box trucks and other large vehicles that can use the express lanes safely.

Encourage greater use of new capacity by allowing HOV-2 for some period of time

Allowing HOV2 vehicles to use the express lanes during the initial period of operation could ease the transition to HOV3+ and encourage more drivers to obtain transponders and use the express lanes. The HOV requirement could be increased if too many vehicles use the express lanes during that period and the Private Partner is unable to maintain an average speed of at least 45 miles per hour in the express lanes by adjusting toll rates for single-occupancy vehicles.

Modify the compensation provisions for unplanned revenue impacting facilities

Prior to issuance of the final RFP, the definition for an Unplanned Revenue Impacting Facility was amended to allow the proposers to seek compensation if a specific project – an additional general purpose lane in each direction between Exit 28 and Exit 36 on I-77 – was constructed and the additional capacity adversely affected toll revenue generated by the express lanes. It may be possible to negotiate

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a modification to the CA that eliminates the potential compensation after a certain date in the future or if certain revenue performance thresholds have been met.

Key Challenges

To reach agreement on changes to the project scope or the CA, NCDOT and the Private Partner would need to commit senior personnel and resources to the effort. There is no assurance that the technical analysis will confirm the viability of any of the concepts or that the parties can reach agreement on the cost of any change.

Potential Costs

The cost to evaluate and implement the concepts cannot be determined until the options are refined.

Implementation Timeframe

The timeframe will depend on the options to be investigated and the resources committed to the effort.

Relevant Examples

Elizabeth River Tunnels Project (Virginia) – In 2015, VDOT negotiated to eliminate tolls on one segment of the project in exchange for a \$78 million payment. The private partner agreed to fund a toll relief program for low-income residents who use the toll facility.

405 Express Lanes (California) – After closing a \$629 million TIFIA loan in July 2017, the Orange County Transportation Authority announced that the interest savings from the federal loan would allow the 405 Express Lanes, which are expected to open in 2023, to remain free to two-person carpools during non-peak hours for the first three and a half years of operation. The express lanes will be free at all times for vehicles with three or more people.

7.4 Work with CRTPO to identify and advance additional improvements and programs

Potential Policy Rationale

Under the CA, the Private Partner cannot seek compensation for transportation improvements undertaken to increase traffic capacity in the corridor through installing intelligent transportation systems, through reconstructing existing lanes, through developing new full access frontage roads, or through restriping traffic lanes, medians and shoulders.

Feasibility studies conducted by NCDOT in 2010 included analyses of the possible use of shoulders for general purpose traffic on I-77 between Exit 19 and Exit 28 on either a part-time or full-time basis. The evaluation of potential operational impacts indicated that the use of shoulders could improve the level of service at ramp locations and the mainline compared to a no-build condition. Options to enhance transit service in the corridor or to develop new park-and-ride lots could also be investigated.

Key Challenges

NCDOT and CRTPO would need to commit resources to work with local jurisdictions to identify and advance options that could have a meaningful impact on long-term congestion in the corridor. Prior feasibility studies would likely have to be redone to incorporate current traffic forecasts and the express lanes.

Potential Costs

The cost of potential spot improvements will depend on the scope and location and the projects would need to be scored under STI.

Implementation Timeframe

The timeframe will depend on the options to be investigated and the resources committed to the effort.

Relevant Examples

I-405 Northbound Peak Use Shoulder Lane Project (Washington) – In April 2017, the Washington State Department of Transportation (WSDOT) opened a 1.8-mile section of the shoulder of northbound I-405 to relieve congestion caused by vehicles merging onto the highway. The shoulder, which is generally open only during the peak afternoon commute, adds capacity to a section of I-405 that has two general purpose lanes and one express toll lane. Overhead lane control signs display whether the shoulder lane is open to traffic. Vehicles over 10,000 gross vehicle weight are prohibited from using the shoulder, with the exception of buses. The project was funded with revenue from the I-405 express toll lanes, which opened in 2015.

Metro Express Lanes Transit Rewards Program (California) – Frequent transit riders can earn a \$5 toll credit by taking 16 one-way trips on certain buses that travel on I-10 and I-110 during peak hours. The toll credits must be used on the Metro ExpressLanes (HOV lanes on I-10 and I-100 that were converted to HOT lanes in 2012).

State Road and Tollway Authority (SRTA) Direct Xpress Bus Service (Georgia) – SRTA plans to leverage the express lanes currently in operation or construction in Georgia by adding new bus routes, park-and-ride lots, and potentially all-day Xpress service to Hartsfield-Jackson International Airport.

7.5 Examine feasibility of purchasing the Express Lanes Project after completion.

Potential Policy Rationale

NCDOT has transferred significant construction and financial risk to the Private Partner. After the Express Lanes Project opens to traffic, NCDOT can assess the initial operating performance of the express lanes and examine the feasibility of negotiating with the Private Partner to acquire its financial interests. An acquisition of the Express Lanes Project might allow NCDOT to implement tolling policies that maximize throughput or achieve other objectives.

Key Challenges

The feasibility of an acquisition after project completion would be driven by many variables beyond the control of NCDOT, such as the level of tax-exempt interest rates in the future. There is no guarantee a transaction could be successfully negotiated, but NCDOT would retain the option to terminate the CA for convenience.

Potential Costs

Costs to NCDOT to evaluate this option would include the expenses associated with outside professional services, including a traffic and revenue consultant and legal and financial advisors. The cost to acquire the Express Lanes Project will depend in large part on the operating performance of the express lanes and projected toll revenue. It may be possible to fund all or a majority of the acquisition cost by issuing

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project debt secured by express lanes revenue and/or by assuming responsibility for all or a portion of the existing project debt.

Implementation Timeframe

If this option is considered, NCDOT should undertake initial feasibility analyses during construction of the Express Lanes Project, but most activity and the potential acquisition would occur after the express lanes have been operating for at least a year or two.

Relevant Examples

91 Express Lanes (California) – The 91 Express Lanes, a 10-mile, four-lane toll facility located in Southern California, opened to traffic in 1995. The project was developed and financed by the California Private Transportation Company (CPTC) under a franchise agreement with the California Department of Transportation. In 2001, the Orange County Transportation Authority (OCTA) initiated negotiations to purchase the franchise in order to remove a provision that required CPTC to be compensated if competing transportation improvements were built.

OCTA purchased the 91 Express Lanes in 2003 for \$207.5 million (it assumed \$135 million of project debt and paid \$72.5 million in cash to CPTC). Ten months later, OCTA issued tax-exempt toll revenue bonds to retire developer debt and to reimburse a portion of funds used for acquisition.

South Bay Expressway (California) – In 2011, the San Diego Association of Governments (SANDAG) purchased the South Bay Expressway (SBX) from USDOT and other creditors. SANDAG assumed the outstanding TIFIA loan that was secured by SBX revenue and used local sales tax revenue to fund the rest of the purchase price. SANDAG reduced toll rates for cash and electronic toll collection customers by 20 to 40 percent after the acquisition.