APPENDIX B: Transit Plan Risk & Mitigation Strategies

DRAFT 2017 COUNTY TRANSIT PLANS – FINANCIAL RISKS AND MITIGATION STRATEGIES

There are several financial risks to the draft 2017 County Transit Plans (Plans) that could arise at different times during the period of the Plans. This document describes the primary downside risks that may emerge and the schedule on which the parties would need to respond, and the options and timeline for mitigating the risks. This document is not meant to be an exhaustive list of risks and mitigation strategies.

Financial Risks:

1. Federal funding
2. State funding
3. Local sales tax forecast
4. Cost overruns
5. Schedule delays

Mitigation Strategies:

A. Contingency in the project budget
B. Design changes to reduce project cost
C. Savings from property donations
D. Cost transfer to project partners
E. New revenue

Financial Risks

This section focuses on the potential impact of financial risks to the delivery of the Durham-Orange Light Rail Transit (D-O LRT) Project. The federal funding risks and local economic growth factors are faced by all transit agencies seeking to construct major capital projects; the state factors vary according to the policy environment and funding mechanisms for transit in each state.

1) **Federal Funding** – The draft Plans assume 50% federal funding for the D-O LRT Project through the Capital Investment Grant (CIG) program.

   The President's federal fiscal year (FY) 2018 budget proposal calls for limiting the CIG program to only those projects that have already received Full Funding Grant Agreements (FFGAs). While the President issues budget priorities each year, the budget is set by Congress. The elimination of the CIG program was previously proposed in the House of Representatives budget in 2011, while the Senate version of the budget retained the program. The final budget retained the CIG program and funded it at a level of $2 billion per year. Although current federal transportation law authorizes the New Starts program through 2020, if the FY 2018 federal budget adopted by Congress funds no new FFGAs, then pursuant to the draft Cost Sharing Agreement, Durham and Orange Counties and GoTriangle would convene within fifteen business days and decide whether to continue advancing the D-O LRT Project at risk.

   Without federal funding, Durham and Orange Counties, GoTriangle, and the DCHC-MPO would not be able to pursue the D-O LRT Project. Although a one-year reduction in CIG program funding in FY 2018 would not directly affect the D-O LRT Project, it would call into question whether CIG program funding would be available in future years when the D-O LRT Project is scheduled to request federal funds.

   Federal funding risks could re-emerge (and be addressed) each federal budget year between now and FY 2020 when GoTriangle plans to submit the request for a FFGA for the D-O LRT

Project.

If a federal funding risk is realized and the parties decide to suspend pursuit of the D-O LRT Project, the losses would be limited to the amount of money that will have been spent on the project development and engineering work to that point in time when the decision is made to suspend work. To date, approximately $40 million has been spent on project development and engineering activities for the D-O LRT Project. As the federal budget is typically adopted in October of each year – GoTriangle expects to spend approximately $10 million more between entry to Engineering and October 2017 if the D-O LRT Project advances into Engineering.

2) **State Funding** – The draft Plans assume 10% state funding for the D-O LRT Project. In 2016, the North Carolina General Assembly passed a law capping the state contribution toward rail projects at 10% of project costs. It also required that the D-O LRT Project wait until late 2018 to be scored and prioritized for inclusion in the 2020-2029 State Transportation Improvement Program (STIP). Depending on the amount of statewide money available, the level of state funding available for the D-O LRT Project could fall below 10% of project costs.

   The preliminary availability of state funding for the D-O LRT Project will be announced in late 2018. If it is lower than 10% of project costs, in accordance with the draft Cost Sharing Agreement, the parties would convene within fifteen business days after the release of the Draft STIP and decide upon a course of action for the D-O LRT Project.

   To mitigate for the risk of lower than expected state funding, GoTriangle is pursuing new sources of revenue, including in-kind contributions of right-of-way from property owners along the D-O LRT Project alignment, grants from foundations and endowments, a private philanthropic campaign, and other sources of federal funds. (These activities are described in more detail in the Mitigation Strategies section below.) In addition, GoTriangle is preparing a set of cost mitigation strategies that could be used to reduce the cost of the D-O LRT Project, thereby reducing the amount of additional funds required. (These efforts are also described in more detail in the Mitigation Strategies section below.)

3) **Local Sales Tax Forecast** – The half-cent sales tax dedicated for transit is the largest local revenue source for the Plans. Over the past decade, which included declines in net collections in FY 2008 and 2010 due to the economic recession, sales tax collections for a similar one-cent sales and use tax in the two counties grew at an average annual rate of 5.5 percent (5.7 percent in Durham County and 4.8 percent in Orange County).

   In November 2016, GoTriangle contracted with Moody's Analytics, a well-regarded economic analytics firm, to provide a forecast of the half-cent sales tax dedicated for transit. Moody's developed two forecasts: a Baseline forecast and a Downside forecast.

   In accordance with industry standards, the Draft Plans use the Baseline forecast as the planning assumption for the sales tax growth rate. The sales tax growth projected in the Moody's Baseline forecast for the half-cent sales tax equates to an average annual rate of 4.2 percent in

the two counties – more than a full percentage point below the 10-year average for the one-cent sales and use tax for the two counties noted above. The Moody's Baseline forecast equates to an average annual rate of 4.33 percent in Durham County and 3.71 percent in Orange County.

In accordance with Federal Transit Administration (FTA) requirements, GoTriangle and our financial advisor have also evaluated scenarios using the Downside forecast, to understand the effects and potential mitigations that may be required to plan for less than expected sales tax growth. The Moody's Downside forecast equates to an average annual rate of 3.14 percent in Durham County and 3.00 percent in Orange County.

The sales tax forecast affects GoTriangle's ability to borrow money to fund construction of the D-O LRT Project. In addition to sensitivity analyses on the sales tax growth rate that GoTriangle must complete for the FTA, a sensitivity analysis on the local sales tax growth rate to evaluate GoTriangle's ability to make debt repayments for the life of each loan will be needed in order to secure financing at favorable terms.

With other financial planning assumptions held constant, planning for the Moody's Downside forecast creates a cash shortfall of approximately $100 million (year of expenditure, or YOE) toward the end of the construction period for the D-O LRT Project, because the lower sales tax growth rates would limit GoTriangle's ability to borrow funds needed for construction.

To address the potential funding shortfall and strengthen GoTriangle's ability to borrow funds, GoTriangle is pursuing new sources of revenue, including in-kind contributions of right-of-way from property owners along the alignment, private grants, a private philanthropic campaign, and other federal funds. (These activities are described in more detail in the Mitigation Strategies section below.) In addition, GoTriangle is preparing a set of cost mitigation strategies that could be used to reduce the cost of the project, reducing the amount of additional funds required. (This is also described in more detail in the Mitigation Strategies section below.) In addition to the mitigation strategies identified in this document, another potential course could be that one or more local governments could choose to pledge other future revenues to increase the D-O LRT Project's borrowing capacity.

4) **Cost Overruns** – This risk remains for all capital projects in the Plans; however, it varies based on where each project is in its development stage. The D-O LRT Project has completed the Project Development phase and is at a 30% level of engineering design. At this level of design, the project budget includes a commensurate level of contingency to guard against cost overruns as described in part A of the Mitigation Strategies section below. Strategies to mitigate cost overruns beyond the project budget are described in parts B through F of the Mitigation Strategies section below.

5) **Schedule Delays** – Schedule risk is particularly important for large multiyear programs due to the cost of inflation. The cost associated with a one-year construction schedule delay for the D-O LRT Project is approximately $60 million YOE, which would not be offset by an increase in federal funding for the project. The most likely cause of a delay of this magnitude is if the

D-O LRT Project does not remain on schedule to receive a federal FFGA in FY 2020.

To keep the D-O LRT Project on schedule, there are four remaining critical steps in the federal New Starts that need to be met. First, GoTriangle will need to request a funding recommendation from the FTA by September 2018. Second, the FTA would need to include the D-O LRT Project in its Annual Report on Funding Recommendations for the CIG Program in early 2019 (typically released in February). Third, the adopted federal budget for FY 2020, scheduled to be in place by September 2019, would need to include funding for the D-O LRT Project. Finally, GoTriangle would need to apply for the federal FFGA no later than December 2019. In the event that any of these four steps is not met, pursuant to the draft Cost Sharing Agreement, the parties would convene within fifteen business days and decide upon a course of action.

Mitigation Strategies

Federal Oversight – All projects in the New Starts pipeline, including the D-O LRT Project, are subject to a robust Project Management Oversight program administered by the FTA. The FTA conducts Project Management Oversight reviews for major capital projects to ensure that the project sponsors have all the processes and procedures in place to effectively manage and deliver the promised benefits of the project on time, within budget, and in compliance with all applicable federal requirements and the project management plan.

Oversight begins early in project implementation, and continues through construction to the end of disbursement of federal funds to the project. A Project Management Oversight Contractor (PMOC) was assigned to the D-O LRT Project in the fall of 2015.

Over the past 18 months, the PMOC has reviewed extensive project management documentation, design plans, schedules, cost estimates, and other reports generated by GoTriangle for compliance with FTA guidelines and sufficiency for the entry to Engineering milestone. Based on its review and assessment of the D-O LRT Project, the PMOC recommended the D-O LRT Project for advancement into the Engineering phase. Once approved to enter Engineering, GoTriangle will continue to work with guidance from the FTA and the PMOC to move the project forward, secure federal grant funding, and successfully deliver the D-O LRT Project.

A significant component of the Project Management Oversight program during the Engineering phase is the FTA-led Risk Assessments for the project, the first of which typically occurs within six months after a project's entry into Engineering. As part of its Risk Assessment, FTA will require GoTriangle to formalize a risk tracking plan, as well as to identify primary and secondary mitigation measures. The term "primary mitigation" refers to strategies that are performed in advance of a risk occurring, to reduce the likelihood or severity of the risk. The term "secondary mitigation" refers to strategies that are performed after a risk event occurs, to manage the effects. The PMOC will monitor GoTriangle's risk management efforts on a quarterly basis throughout the life of the D-O LRT Project.

Mitigation Strategies for Financial Risks – This section describes mitigation strategies for the financial risks described in the previous section, which will form the basis for the financial portion of the risk

mitigation plan to be developed early in Engineering. The strategies are organized in three primary categories:

- Conservative budgeting (part A)
- Cost reduction strategies that can be applied moving forward (parts B, C, and D)
- Potential other revenues (federal and private) that GoTriangle will continue to seek (part E)

Addressing the approximately $100 million YOE shortfall associated with the downside local sales tax growth rate (part 3 above) will require cooperation between project partners. It is important to note that project scope reductions do not directly reduce the shortfall on a dollar-for-dollar basis because the federal and state shares associated with that scope goes away. For example, eliminating $100 million YOE shortfall requires $245 million YOE in cost reductions, in the absence of new revenue.

The following table summarizes the cost reduction strategies described in detail in parts B, C, and D below:

Cost-Reduction Strategies (YOE)

Strategies Under GoTriangle Control	
Value Engineering (part B)	$50 million
Further Cost Cutting (part B)	$30 million
Strategies Requiring Cooperation from Project Partners	
Savings Associated with Property Donations (part C)	$40 million
Cost Transfer to Project Partners (part D)	$55 million
Total Potential Cost Reductions Identified To Date	
Total	$175 million

A) **Contingency in the D-O LRT Project Budget** – Including appropriate contingency in a project's budget means planning for a conservative estimate of project costs. Ten years ago, the FTA instituted a robust risk management oversight process, designed to reduce cost overruns on New Starts and Small Starts projects. In 2016, the FTA reported that of the 18 projects approved to enter the New Starts Engineering phase (or comparable phase of the Small Starts program) in 2007 or later that have since been completed, 17 projects (94%) were completed within budget. As part of its current risk management oversight process, the FTA recommends, based on historic project information from around the country, that New Starts project cost estimates include a minimum of 25% total contingency at entry to Engineering. For the D-O LRT Project, the amount of all contingency—allocated and unallocated—is approximately 30% of the base cost, which is more than the FTA's recommended minimum of 25%. In January 2017, the FTA's Project Management Oversight Contractor assigned to the D-O LRT Project reviewed the project cost estimate and concluded that it contains an appropriate level of contingency for entry to Engineering.

Allocated Contingency (20%) – The FTA cost estimate reporting format requires that for each line item, a base estimated cost is reported, and an allocated contingency is assigned separately based on the level of certainty in the base cost estimate for that particular item. For the D-O LRT Project, the total allocated contingency across all line items is approximately 20% of the total base cost, approximately $350 million YOE. "Allocated contingency" is the additional cost

included due to existing uncertainties related to the quantity of the construction items for known project elements. Examples of items that would be covered by the allocated contingency include: encountering deeper or lower quality bed rock, requiring more costly foundation design than anticipated; encountering unanticipated subsurface conditions, causing more rock excavation or more improvement of poor soils; and increased material quantities, such as concrete and reinforcing steel.

Unallocated Contingency (10%) – The FTA cost estimate reporting format also requires an additional amount of unallocated contingency reported separately; for the D-O LRT Project, the unallocated contingency is approximately 10% of the base cost, approximately $170 million YOE. "Unallocated contingency" covers what are often referred to as "unknown unknowns" – construction items that are not determined until they are unexpectedly encountered on a project, such as the unknown presence of an underground utility. Examples of items that would be covered by the unallocated contingency include: unanticipated utility relocations; unanticipated right-of-way acquisitions; and unanticipated changes in stakeholder requirements.

B) **Design Changes to Reduce Project Cost** – Over the past 18 months, GoTriangle has engaged in several separate reviews of the preliminary engineering plans to identify potential cost savings that can be implemented as the D-O LRT Project advances. Some of these changes are considered "value engineering" – design changes that preserve the quality of the system, but that are more cost efficient than the initial design. Other changes are considered "cost cutting" – design changes that negatively affect the quality of the system, but should be considered as mitigation options in the event of a funding shortfall or cost overrun.

Value Engineering – $50 million

To date, the design team has identified approximately $50 million YOE in potential savings from value engineering strategies. This resulted from more detailed study following the 2015 Value Engineering Workshop, in which industry experts from peer agencies and engineering firms reviewed the preliminary design of the D-O LRT Project to identify a preliminary list of potential savings. GoTriangle intends to incorporate these changes into the design as engineering advances from the current 30-percent level to the 100-percent level for construction. These strategies include:

- Constructing the system for 2-car train operations (not 3-car)
- Reducing the length of aerial structures, where practicable
- Economizing the maintenance facility design and rail systems design
- Using less-aesthetic bridge supports in areas that are not highly visible
- Adjusting the light rail alignment along US 15-501/Western Bypass to reduce rock excavation
- Adjusting the light rail alignment along University Drive to reduce roadway reconstruction

Further Cost Cutting – $30 million

As described above, after the D-O LRT Project enters Engineering, the FTA risk management process will require cost-cutting strategies to be identified and reserved as "levers to pull" in the

event of a need to mitigate a funding shortfall or cost overrun later on in the project (referred to as "secondary mitigation"). To date, the design team has identified approximately $30 million YOE in potential additional cost cutting strategies. These strategies all would require further evaluation during Engineering to confirm feasibility and precise cost savings. These strategies include:

- Using less-aesthetic bridge supports throughout the alignment. This strategy would have a noticeable aesthetic impact to the public.
- Removing the Hamilton Road and Woodmont stations. This strategy would negatively affect customers in these station areas, and could affect the New Starts rating for the D-O LRT Project. However, these two stations were selected because they are among the lowest-ridership stations in current projections, and are both relatively closely spaced with the Friday Center station.
- Single-tracking on one or more bridges. Three segments have been identified as candidates: the UNC aerial guideway, the NC 54 aerial guideway, and the New Hope Creek aerial guideway. Implementing these cuts would significantly negatively affect operational flexibility and reliability of the system by introducing "choke points" along the alignment. The effects of single-tracking in multiple segments would be worse than implementing only one. During Engineering, an operational study would be required to confirm the operational impacts of implementation of one or more of these cuts.

C) **Savings Associated with Property Donations from D-O LRT Project Partners** – The budget includes several costs associated with obtaining right-of-way for the D-O LRT Project: (a) the actual anticipated cost of the property, (b) a contingency in case the value of the property exceeds the estimate, and (c) administrative costs associated with making the purchases. When a project partner donates property to the project, these costs are avoided.

Avoided Costs Associated w/ Property Donations from Project Partners – $40 million
The current financial plan for the D-O LRT Project takes into account item (a) above for properties that are expected to be donated based on memoranda of understanding (MOUs) and letters of intent (LOIs) received from public, institutional, and commercial property owners in the light rail corridor as of December 2016. When these transactions occur, the additional savings from items (b) and (c) will be realized. This would result in a total additional cost savings of approximately $25 million YOE based on the current cost estimate.

GoTriangle is pursuing additional property donations in the D-O LRT Project corridor, beyond those already identified as of December 2016. The estimated cost savings associated with these potential additional donations is approximately $15 million YOE.

D) **Cost Transfer to Project Partners** – There are many project elements included in the D-O LRT Project scope that are "separate enough" from the light rail system itself that they could be efficiently constructed by other parties. If project partners agree, the cost of these items could be paid for, either in full or in part, outside of the Tax District Revenues contributed by Durham

and Orange Counties and committed to the D-O LRT Project.

Cost Transfer to Project Partners – $55 million
To date, the design team has identified two categories of items that could be considered for construction separately from the D-O LRT Project:

- Pedestrian bridge and roadway/parking reconfiguration at UNC ($10 million)
- Parking deck at Alston Avenue station ($45 million). This parking deck is needed to provide park-and-ride capacity at the east end of the alignment, and must be constructed on a schedule tied to the D-O LRT Project construction. It may also serve the future Durham-Wake Commuter Rail project. Potential funding partners may include the City of Durham, Durham County, Wake County, North Carolina Central University, and/or a private entity.

The $55 million in cost savings assumes that these elements are eliminated from the D-O LRT Project and constructed separately by third parties, which means that they would no longer be eligible for the state and federal funding shares. <u>An alternate approach would be to retain these elements in the project scope but transfer the responsibility for the local share to a third party. In that case, the funding responsibility would be approximately $22 million rather than the full $55 million.</u>

E) **<u>New Revenue</u>** – As part of addressing the key risks in the financial plan, GoTriangle and its partners are exploring ways to supplement the current dedicated transit revenues.

Other federal funds – In addition to federal New Starts funds, GoTriangle is seeking to apply other federal funds to the D-O LRT Project. GoTriangle has discussed with the DCHC MPO and NCDOT how other projects around the country have used such funds, and is exploring opportunities to flex funds from the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and Surface Transportation Block Grant Program (STBGP) to the D-O LRT Project during the construction phase. The DCHC MPO has agreed to work with GoTriangle to further explore this funding source.

Private philanthropic contributions and grants – In cities such as Detroit and Atlanta, private philanthropic funding sources have complemented allocations from traditional public sources to advance the construction of major infrastructure projects for their communities. GoTriangle believes that a similar funding model may prove successful for the D-O LRT Project. GoTriangle is in the process of establishing a nonprofit organization that will seek private philanthropic contributions and grants. GoTriangle's Board of Trustees authorized GoTriangle staff to begin the incorporation process in December 2016. Within the next few months, articles of incorporation will be filed with North Carolina's Secretary of State in order to formally establish the entity, GoTransit Partners. Once established, the organization will apply for tax-exempt status at the state and federal levels. The non-profit will be staffed with an executive director.

GoTriangle envisions several roles for the nonprofit. The nonprofit will work with the Funding

and Community Collaborative (Collaborative), a group of 21 private citizens and leaders from universities, health care institutions, the private sector, and local governments who are committed to securing additional funds so as to reduce the local share of the D-O LRT Project or mitigate any funding shortfalls. The nonprofit will be able to pursue the philanthropic prospects identified by the Collaborative and be eligible to receive tax-deductible donations of property (real property, money, and other personal property). The tax benefits associated with donations will expand the range of citizens and businesses that are willing to contribute.

Additionally, the nonprofit will be eligible to seek foundation grants not typically available to public agencies. GoTriangle has begun the process of identifying grant-making organizations whose missions resonate with the values of providing excellent transit service – namely, improving the economic, environmental, cultural, social, healthcare access, and educational opportunities in our region. Such foundations, endowments, and trusts identified to date include the Golden LEAF Foundation, the Goodnight Educational Foundation, the Sall Family Foundation, the AJ Fletcher Foundation, the Blue Cross Blue Shield Foundation, the Bank of America Foundation, and the North Carolina State Employees Credit Union Foundation.

GoTriangle is confident about the prospects for building private, corporate, and philanthropic support for the D-O LRT Project. This confidence is rooted in past experience where the people and organizations of the Research Triangle region have consistently demonstrated a willingness to make robust investments in their communities.

Value Capture – As far back as 2011, Value Capture—the strategy of having the areas around stations that increase in value due to public investment contribute to paying for that transit investment—was discussed as a potential revenue stream for the D-O LRT Project. The adopted 2011 and 2012 plans in Durham and Orange Counties, which anticipated 25% state funding based on historical precedent with Charlotte, did not contain a value capture component when they went to the ballot.

As part of the Transit-Oriented Development Pilot Program grant received by GoTriangle from the FTA, consultants at Gateway Planning are currently in the process of assessing the potential value of future development at each station along the D-O LRT line, and the potential amount of revenue that value capture districts at stations could contribute to project funding will also be measured. The results of this study and potential value capture implementation strategies for local governments to consider should be available in summer or fall of 2017.

Efforts to round out the non-New Starts funding of the D-O LRT Project will be ongoing in the coming months and years. GoTriangle envisions our local government partners, the Collaborative and the nonprofit, described above, to be important components of this effort, as they consider the case for value capture opportunities and help to identify and secure private, corporate, and philanthropic contributions to the project.