

I. Introduction

GRTA will review major transit new capacity projects for deliverability (constructability) in connection with the regional sales tax referendum. House Bill 277 (the Transportation Investment Act signed into law in 2010) generally calls for a transportation sales tax referendum for twelve regions in August of 2012.

A list of projects is to be developed for each region by GDOT's Planning Director (the "unconstrained list"). From that list, elected officials will select the projects to be constructed when/if the referendum is approved by the voters.

All projects on the final constrained list must be constructible (reasonable expectation of development through construction within a ten-year time frame). The State of Georgia will identify the draft transit capital projects for review by GRTA in this effort.

A separate performance review for these projects is being undertaken by the Atlanta Regional Commission focusing on performance measures.

1. Project Types Reviewed

GRTA will review Major Capital Projects and Programs using the process described in this document. Minor Capital Projects, State of Good Repair (SOGR) programs or Maintenance projects will not be reviewed.

Minor Capital Projects may include small isolated facilities to support existing systems and services, renovations, and fleet replacement purchases.

Major Capital Projects and Programs may include Bus Rapid Transit (BRT), Light Rail Transit (LRT), Commuter Rail, and Commuter Bus Projects.

II. Methodology

The deliverability risk review is anticipated to be conducted using two parameters to rate the delivery risk; Likelihood of a Delivery Risk and Severity of the Delivery Risk.

1. Applicability to all Public Transit Modes

The Delivery Risk Factors used for the GRTA reviews are formulated to be as mode-neutral as possible. Risk Factors for many procedural items including permitting, funding, agreements, and owner requirements can all be applied equally across many Public Transportation modes. A BRT system adding dedicated lanes to an existing Interstate, or an LRT system that will be located in the median of an existing expressway face the same procedural Risk Factors. Some of the procedural Risk Factors are dependant on the mode or the owner. An LRV or BRT project on public roads has a lower Risk Factors than a Commuter Rail project on a busy privately owned freight railroad line.

The physical dimensions of some features may change between modes, however the Risk Factors associated with the need to design, procure and construct are relatively constant if the features exist for a given project. A BRT maintenance shop and storage yard may be smaller than an LRT or Commuter Rail yard, but the Risk Factors associated with neighborhood acceptance, permitting, land acquisition, and facility design and construction are very similar.

2. Risk Factors related to Federal Funding

Many sponsors may wish to leverage the HB 277 funds with Federal Funds, using the HB 277 funds as local match. Alternately, a sponsor might try to use the HB 277 funds to build an initial segment that will be used as local match for Federal funds on future segments. These paths are attractive and have been done in the past, but from a Delivery Risk analysis viewpoint they are fraught with risk.

a. Not all Federal Funds are High Delivery Risk Factors

Federal Funds come from many sources and with many different sets of requirements. For Minor Capital Project, funding sources dedicated to specific activities may make the Federal Funding less of a Delivery Risk Factor from a schedule and availability viewpoint.

It should be noted that any Federal Funds for construction require compliance with Federal level environmental documents, and these requirements are typically more restrictive and take longer than State requirements. Therefore any Federal funds do carry a Delivery Schedule Risk Factor higher than projects funded with purely local funds.

b. Local Funded Project as Future Match

This method has been successfully implemented on several LRT systems. The Risk Factor associated with this is that the project must adhere to all of the procurement and management practices as a federally funded project to make the expenditure eligible.

The future Federal partner should be thoroughly briefed and documentation such as an MOU or Letter of No Prejudice should be obtained to memorialize the understanding between the parties. The negotiations and discussions needed to develop and finalize the documents take time and must be concluded early enough in the project to maximize the eligibility of the local funds as future match.

Other Risk Factors that will apply are discussed in the following Federal Funding sections.

c. FTA New / Small Starts Funding – Funding Risk

The FTA New / Small Starts Funding program is a competitive Federal Program with other criterion beyond project worthiness. FTA has counseled many sponsors that the sponsor must make regional decisions about which projects to bring forward. The FTA considers the level of funding provided regionally, and multiple large projects in a region are not likely to receive funding at the same time. A sponsor's project that is dependant on Federal Funds has a significant Delivery Risk if other projects and programs in the region are also submitted for federal funding.

d. FTA New / Small Starts Funding – Funding Schedule Risk

The FTA New / Small Starts Funding program is a Federal Program with a very detailed series of activities that must be accomplished before a project can even be considered. Once the project has completed these activities, the project is rated and then entered into the competitive pool of projects. The number of projects that are funded varies year to year with no minimum level guaranteed. A worthy project may take several years to over a decade to work its way through the funding process and that uncertainty in the funding schedule translate to a significant Delivery Risk in any project's schedule.

e. FTA New / Small Starts Funding – Process Risk

The FTA New / Small Starts Funding program requires a process that includes significant studies and public out-reach activities. The studies and outreach activities add time to the schedule just to develop the reports and to receive the required reviews and approvals. The HB 277 funding has time limitations on the funds, and the FTA requirements may add too much time to a project's schedule to allow it to meet the HB 277 funding schedule.

The other part of the process Delivery Risk Factor is cost. All of the studies outreach, reporting, and review activities cost money to perform. Various agencies have reported cost reductions in the project delivery associated with opting out of Federal Funding and using purely local funds. The Federal Process Risk Factor is higher than the locally funding Risk Factor.

3. Rating

GRTA will rate the delivery risk for each project using a combination of Quantitative and Qualitative measures. GRTA will use as few Qualitative measures as possible, but the scoring of reports and implementation plans will require the application of professional experience that is difficult to quantify.

The Likelihood of a Delivery Risk is predominately a quantitative measure that will be based on the information about the project provided by the Sponsor. The quantitative rating will be tempered by the collective experience of GRTA’s review team. The risk sub-factors will be used to inform the intermediate ratings. Incomplete or unrealistic information increases the likelihood that a delivery risk will occur on the project. The rating is shown in the following table:

| Likelihood of a Delivery Risk | | | | |
|--|--|--|--|--|
| 1 May Never Occur | 2 Not Likely to Occur | 3 May Occur | 4 Likely to Occur | 5 Almost Certain to Occur |
| <10% | 10% to 39% | 40% to 60% | 61% to 90% | >90% |

The Severity of a Delivery Risk is predominately a qualitative measure that will be based on the collective experience of GRTA’s review team. The risk sub-factors will be used to inform the intermediate ratings. In the case of permits or approvals, the minimum statutory time will set the minimum threshold that will be adjusted upward based on the review team’s experience. The rating is shown in the following table:

| Severity of a Delivery Risk | | | | |
|---|--|---|---|--|
| 1 Insignificant Effect on Project Delivery | 2 Moderate/ Typical Project Issue | 3 Moderate Project Issue | 4 Severe Project Issue | 5 May Cause Project to Fail |
| < 3 months | 3 to 12 months | 13 to 24 months | 25 to 36 months | > 36 months |

The two project delivery risk parameters will be charted on a risk matrix as shown in the following figure, and the sum of the two parameters is the rating for the specific risk factor.

| | | Risk Factor Rating | | | | |
|-------------------------------|---|-------------------------------|----|----|----|----|
| | | Severity of the Delivery Risk | | | | |
| X | | 1 | 2 | 3 | 4 | 5 |
| Likelihood of a Delivery Risk | 5 | 5 | 10 | 15 | 20 | 25 |
| | 4 | 4 | 8 | 12 | 16 | 20 |
| | 3 | 3 | 6 | 9 | 12 | 15 |
| | 2 | 2 | 4 | 6 | 8 | 10 |
| | 1 | 1 | 2 | 3 | 4 | 5 |

Risk factors with a Likelihood or Severity of 5 or Risk Factor Rating greater than 7 should be mitigated to reduce the risk profile.

4. Risk Factors

GRTA has developed the following list of Risk Factors that will be used to review and rate the project risk for deliverability. The Risk Factors were developed to address a broad range of projects that are in many phases of development. Risk sub-factors were developed to allow projects that are in active development to be credited for partial activities. Recognizing the completion status of the risk sub-factor allows for a balanced review of what remaining items are required to deliver the project so that a reasonable completion schedule can be developed.

The projects will be reviewed across six general phases of project development and delivery. Risk factors in all phases will be considered unless the project configuration does not require them.

The following table details the risk factors and their assignment to the six project development phases. Following the table is a detailed discussion of the risk factors and the metrics for their application.



| Risk factors & risk sub-factor | Procurement / Agreements | Planning & Environmental Analysis | Engineering & Architectural Design | Right-of-Way Acquisition | Construction | Commissioning & Testing |
|--|---------------------------------|--|---|---------------------------------|---------------------|------------------------------------|
| 1. Project crosses jurisdictional boundaries | • | • | • | • | • | • |
| 2. Project is part of a larger program | • | • | • | • | • | • |
| 3. Does the Project have a Service / Operating Plan | • | • | • | • | • | • |
| 4. Project Schedule | • | • | • | • | • | • |
| <i>a. Planning Schedule</i> | • | • | • | • | • | • |
| <i>b. Design Schedule</i> | • | • | • | • | • | • |
| <i>c. Permitting Plan & Schedule</i> | • | • | • | • | • | • |
| <i>d. Right of Way Acquisition Schedule</i> | • | • | • | • | • | • |
| <i>e. Construction Schedule</i> | • | • | • | • | • | • |
| 5. Use of Federal Funds | • | • | • | • | • | • |
| <i>a. Sponsor understands Federal Process & Terms</i> | • | • | • | • | • | • |
| 6. Project Delivery Methodology | • | • | • | • | • | • |
| 7. Project Cost Estimates | • | • | • | • | • | • |
| <i>a. Detailed Estimates</i> | • | • | • | • | • | • |
| <i>b. Cost per Mile</i> | • | • | • | • | • | • |
| <i>c. Commercial Grade Investment Study</i> | • | • | • | • | • | • |
| 8. Vehicle Procurement Strategy | • | • | • | • | • | • |
| 9. Identification of Early Action contracts | • | • | • | • | • | • |
| 10. Contract packaging determined | • | • | • | • | • | • |
| 11. NEPA Document in process | • | • | • | • | • | • |
| <i>a. Lead Federal Agency determined</i> | • | • | • | • | • | • |
| <i>b. Type of document determined</i> | • | • | • | • | • | • |
| 12. NEPA finding/decision received | • | • | • | • | • | • |
| 13. GEPA Document in process | • | • | • | • | • | • |
| <i>a. Type of document determined</i> | • | • | • | • | • | • |
| 14. GEPA finding/decision received | • | • | • | • | • | • |



| Risk factors & risk sub-factor | Procurement / Agreements | Planning & Environmental Analysis | Engineering & Architectural Design | Right-of-Way Acquisition | Construction | Commissioning & Testing |
|---|---------------------------------|--|---|---------------------------------|---------------------|------------------------------------|
| 15. Supporting Environmental Documents | • | • | • | • | • | • |
| <i>a. Alternatives Analysis</i> | • | • | • | • | • | • |
| <i>b. Environmental Databases</i> | • | • | • | • | • | • |
| <i>c. Environmental Studies</i> | • | • | • | • | • | • |
| <i>d. Census / Socio-economic Data Collected</i> | • | • | • | • | • | • |
| <i>e. Ridership / OD Studies</i> | • | • | • | • | • | • |
| <i>f. Corridor & Service Development Plans</i> | • | • | • | • | • | • |
| 16. Project Coordination Issues & Studies | • | • | • | • | • | • |
| <i>a. Set Study Area / APE</i> | • | • | • | • | • | • |
| <i>b. Public Outreach</i> | • | • | • | • | • | • |
| <i>c. Environmental Studies (Wetlands, T&E Species, etc.)</i> | • | • | • | • | • | • |
| <i>d. Historic Screening (NEPA Section 106)</i> | • | • | • | • | • | • |
| <i>e. Parklands (NEPA 4f)</i> | • | • | • | • | • | • |
| <i>f. Sensitive Receptors (Noise & Vibration, EMI)</i> | • | • | • | • | • | • |
| <i>g. Station Area Impacts</i> | • | • | • | • | • | • |
| <i>h. View Shed</i> | • | • | • | • | • | • |
| <i>i. Air quality Analysis/Requirements</i> | • | • | • | • | • | • |
| <i>j. Hazardous Materials (RCRA, Super Fund)</i> | • | • | • | • | • | • |
| <i>k. Local Planning Consistency</i> | • | • | • | • | • | • |
| <i>l. System Interoperability</i> | • | • | • | • | • | • |
| 17. Permitting | • | • | • | • | • | • |
| <i>a. Wetlands</i> | • | • | • | • | • | • |
| <i>b. Streams</i> | • | • | • | • | • | • |
| <i>c. Schedule Limitations (spawning, fledging, etc.)</i> | • | • | • | • | • | • |
| 18. Right of Way | • | • | • | • | • | • |
| <i>a. Existing</i> | • | • | • | • | • | • |
| <i>b. Ownership</i> | • | • | • | • | • | • |
| <i>c. Joint Use Compatibility</i> | • | • | • | • | • | • |
| <i>d. Priority (signal, Emergency, etc.)</i> | • | • | • | • | • | • |



| Risk factors & risk sub-factor | Procurement / Agreements | Planning & Environmental Analysis | Engineering & Architectural Design | Right-of-Way Acquisition | Construction | Commissioning & Testing |
|--|---------------------------------|--|---|---------------------------------|---------------------|------------------------------------|
| <i>e. Grade Crossings</i> | • | • | • | • | • | • |
| <i>f. Grade Separations</i> | • | • | • | • | • | • |
| <i>g. Agreements</i> | • | • | • | • | • | • |
| 19. Design Standards | • | • | • | | • | • |
| <i>a. Common Building / Zoning / Development Codes</i> | | | • | | • | • |
| <i>b. AREMA / FTA / TRB</i> | | • | • | | • | • |
| <i>c. AREMA / Freight Railroad</i> | • | • | • | | • | • |
| <i>d. GADOT</i> | • | • | • | | • | • |
| <i>e. Utility</i> | • | • | • | | • | • |
| <i>f. Visual Identity (Stations, Bridges)</i> | | | • | | • | • |
| <i>g. LEED</i> | | | • | | • | • |
| 20. Inter-operability Standards | • | • | • | • | • | • |
| <i>a. Traction Power Voltage</i> | • | • | • | | • | • |
| <i>b. Traction Power Contact</i> | • | • | • | | • | • |
| <i>c. Signal System - Aspects</i> | • | • | • | | • | • |
| <i>d. Signal System - Protocols</i> | • | • | • | | • | • |
| <i>e. Signal System - Car to wayside</i> | • | • | • | | • | • |
| <i>f. Signal System - PTC w/Host Railroad</i> | • | • | • | | • | • |
| <i>g. Passenger Information Systems</i> | • | • | • | | • | • |
| <i>h. Fare Collection System</i> | • | • | • | | • | • |
| <i>i. Fare - Policy (Access Control or Proof of Payment)</i> | • | • | • | | • | • |
| <i>j. Car - Geometric Capabilities</i> | • | • | • | • | • | • |
| <i>k. Car - Floor Height</i> | • | • | • | | • | • |
| <i>l. Station - Platform</i> | • | • | • | | • | • |
| <i>m. Control Center</i> | • | • | • | • | • | • |
| <i>n. Wheel Profile</i> | • | • | • | | • | • |
| <i>o. ADA</i> | • | • | • | | • | • |
| <i>p. Provisioning for future Phases</i> | • | • | | • | | • |
| 21. Significant Facilities/Construction | • | • | • | • | • | • |
| <i>a. Maintenance Shop</i> | • | • | • | • | • | • |
| <i>b. Deep Cuts/High Fills</i> | | • | • | • | • | |



| Risk factors & risk sub-factor | Procurement / Agreements | Planning & Environmental Analysis | Engineering & Architectural Design | Right-of-Way Acquisition | Construction | Commissioning & Testing |
|--|---------------------------------|--|---|---------------------------------|---------------------|------------------------------------|
| <i>c. Tunnels</i> | • | • | • | • | • | • |
| <i>d. Large/Signature Bridges</i> | • | • | • | • | • | |
| <i>e. Parking Decks</i> | • | • | • | • | • | |
| 22. Permits / Agreements | • | • | • | • | • | • |
| <i>a. Environmental</i> | • | • | • | • | • | • |
| <i>b. Relocation</i> | • | • | • | • | • | |
| <i>c. RoW</i> | • | • | • | • | • | • |
| <i>d. Construction/Relocation reimbursement</i> | • | • | • | • | • | |
| <i>e. Remediation</i> | • | • | • | • | • | • |
| 23. Other Features | • | • | • | • | • | • |
| <i>a. Park & Ride</i> | • | • | • | • | • | |
| <i>b. Layover Yard(s)</i> | • | • | • | • | • | |
| <i>c. Stations</i> | • | • | • | • | • | • |
| 24. Traffic Engineering | • | • | • | • | • | • |
| <i>a. Intersection Design</i> | | • | • | • | • | |
| <i>b. Grade Crossings</i> | • | • | • | • | • | |
| <i>c. Grade Separation</i> | • | • | • | • | • | |
| <i>d. Parking</i> | • | • | • | • | • | |
| <i>e. Signal Priority / Pre-emption</i> | • | • | • | | • | • |
| <i>f. MPT during Construction</i> | • | • | • | | • | |
| 25. Plan Reviews | • | • | • | • | • | • |
| <i>a. Utilities</i> | • | • | • | • | • | • |
| <i>b. RoW Owner</i> | • | • | • | • | • | |
| <i>c. Local Governmental</i> | • | • | • | • | • | |
| 26. RAMP Plan | • | • | | • | • | |
| <i>a. Condemnation Rules</i> | • | • | | • | • | |
| <i>b. Condemnation Authority</i> | | • | | • | • | |
| <i>c. Final Ownership</i> | | • | | • | | |
| <i>d. Uniform Relocation Act</i> | • | • | | • | | |
| <i>e. Residential</i> | | • | | • | • | |
| <i>f. Commercial</i> | | • | | • | • | |
| <i>g. Industrial</i> | | • | | • | • | |
| <i>h. Vulnerable / Multi-lingual Populations</i> | | • | | • | | |



| Risk factors & risk sub-factor | Procurement / Agreements | Planning & Environmental Analysis | Engineering & Architectural Design | Right-of-Way Acquisition | Construction | Commissioning & Testing |
|---|---------------------------------|--|---|---------------------------------|---------------------|------------------------------------|
| 27. Railroad Right of Way | • | • | • | • | • | • |
| <i>a. Railroad Agreement</i> | • | | | • | • | • |
| <i>b. Railroad Joint use policies</i> | • | | | | • | • |
| <i>c. Temporal Separation</i> | • | | | | | |
| <i>d. Labor Rules</i> | • | • | • | | • | • |
| <i>e. Lease / Purchase</i> | • | | | | | |
| 28. Highway Right of Way | • | • | • | • | • | • |
| <i>a. Area Reserved</i> | • | | • | • | • | |
| <i>b. Lane Relocations</i> | • | • | • | • | | |
| <i>c. GADOT Coordination</i> | • | • | • | • | • | • |
| <i>d. Clear Zones / Safety Buffers</i> | • | | • | | • | |
| 29. Utility Right of Way | • | • | • | • | • | • |
| <i>a. Utility Agreement</i> | • | • | • | • | • | |
| <i>b. Lease / Purchase</i> | • | | | • | • | |
| <i>c. Relocations</i> | • | • | • | • | • | • |
| 30. Environmental Issues | • | • | • | • | • | |
| <i>a. Contamination (UST, Dry Cleaners)</i> | • | • | • | • | • | |
| <i>b. Remediation</i> | • | • | • | • | • | |
| 31. Schedule Issues | • | • | • | • | • | • |
| <i>a. Coordination with other Projects (Detours/Delays)</i> | | • | • | | • | |
| <i>b. Special Construction</i> | • | • | • | • | • | |
| <i>c. Coordination with Owner construction Forces</i> | • | • | • | | • | • |
| <i>d. Utility Outages</i> | • | • | • | | • | • |
| <i>e. Work Windows</i> | • | • | • | | • | • |
| 32. Permitting / Agreements | • | • | • | | • | • |
| <i>a. Construction Permits (Erosion Control, Closures)</i> | | • | • | | • | • |
| <i>b. Reimbursement Agreement for Flagging / Police</i> | • | • | • | | • | |
| <i>c. Owner Reimbursement Agreements</i> | • | • | • | | • | |
| | | | | | | |
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| Risk factors & risk sub-factor | Procurement / Agreements | Planning & Environmental Analysis | Engineering & Architectural Design | Right-of-Way Acquisition | Construction | Commissioning & Testing |
|---|---------------------------------|--|---|---------------------------------|---------------------|------------------------------------|
| 33. Quality / Management | • | • | • | | • | • |
| <i>a. Construction Management Plan</i> | • | • | • | | • | • |
| <i>b. Quality Control Plan</i> | • | • | • | | • | • |
| <i>c. ADA Tolerances</i> | • | • | • | | • | • |
| <i>d. System Safety / Change Control</i> | • | • | • | | • | • |
| 34. Commissioning Plan | • | • | • | | • | • |
| <i>a. Sponsor Experience</i> | • | | • | | • | • |
| <i>b. Waivers Required</i> | • | • | • | | | • |
| 35. Operations | • | • | • | | • | • |
| <i>a. Training of Crews/Operators</i> | • | | | | | • |
| <i>b. Operator in place</i> | • | • | | | | • |
| <i>c. Shared Operations Tests</i> | • | • | • | | • | • |
| 36. Third Party Responsibilities | • | | • | | • | • |
| <i>a. State Safety Oversight Verification</i> | • | | | | • | • |
| <i>b. Operator Verification</i> | • | | • | | • | • |
| 37. Systems in Commissioning Plan | • | • | • | | • | • |
| <i>a. Signal System</i> | • | • | • | | • | • |
| <i>b. Train Control</i> | • | • | • | | • | • |
| <i>c. Passenger Information System</i> | • | • | • | | • | • |
| <i>d. Vehicle Systems</i> | • | • | • | | • | • |
| <i>e. Fare Collection System</i> | • | • | • | | • | • |
| <i>f. Security & Access Control</i> | • | • | • | | • | • |
| | | | | | | |

III. Project Risk Factor Description

1. *Project crosses jurisdictional boundaries*

This Project Risk Factor is used to identify projects that cross governmental boundaries. This Project Risk Factor was selected due to the inherent difficulties in coordinating the political and procedural differences between the multiple governmental units.

The evidence of a Co-sponsor will be used to show that there is an understanding of the need to coordinate the project efforts.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | Does not Cross / Crosses with Co-Sponsor |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information |
| 4 | ↓ |
| 5 | Crosses but no Co-sponsor |

2. *Project is part of a larger program*

This Project Risk Factor is used to identify projects that represent phased implementation of a larger program. This Project Risk Factor was selected to allow review of how the project fits into an overall program of projects and the development processes that the sponsor used to phase the program, and the sponsor's understanding of the inter-relationship of the phases.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | Single Complete Project |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information |
| 4 | ↓ |
| 5 | Phased Program without consideration of relationship of individual phases. |

3. Does the Project have a Service / Operating Plan

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a Project Service or Operating Plan. This Project Risk Factor was selected due to the need to have a Service or Operating Plan to adequately determine the components required to make up the project and the sizes of the vehicle fleet needed to provide the desired operations.

The existence of a Service or Operating Plan indicates that the project estimates and schedule more accurately reflect the project's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | A Full Service / Operating Plan has been prepared |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information |
| 4 | ↓ |
| 5 | No Service / Operating Plan has been prepared |

4. Project Schedule

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a Project Schedule. This Project Risk Factor was selected due to the need to have a detailed Project Schedule to guide the sponsor through the development of the Project

The existence of a Service or Operating Plan indicates that the project estimates and schedule more accurately reflect the scale and extent of the project.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | A Full Project Schedule has been prepared |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information demonstrating Sponsor's understanding of the phases as demonstrated in the Project Schedule. |
| 4 | ↓ |
| 5 | No Project Schedule has been prepared |

5. Use of Federal Funds

This Project Risk Factor is used to identify projects that are expected to seek Federal funding. This Project Risk Factor was selected due to the additional complexity, level of study, and schedule implications of using federal funds to develop the project

The use of Federal funds introduces additional time to the schedule and the uncertainty of receiving funding to meet the ten year Georgia completion requirements.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | No Federal Funds |
| 2 | ↑ |
| 3 | Intermediate scoring based on Sponsor demonstrating its knowledge of the Federal process and the terms and conditions tied to the Federal funds. A ranking of 2 will be the best given for any project expecting to use Federal funds. |
| 4 | ↓ |
| 5 | Federal Funds are expected |

6. Project Delivery Methodology

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the selection of a Project Delivery Methodology. This Project Risk Factor was selected due to the need to have a Project Delivery Method selected to guide the sponsor through the development of the Project without over or under developing aspects of the project.

There is no preferred Project Delivery Method for the projects, just a requirement that the Sponsor understands the requirements of the selected Project Delivery Method and their effect on the development of the project. Design-Bid-Build, Design/Build or Public-Private-Partnership are examples of various Project Delivery Methods.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | ↑ |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information demonstrating the Sponsor's understanding of the selected delivery method |
| 4 | ↓ |
| 5 | No Project Delivery Method has been prepared |

7. Project Cost Estimates

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a Detailed Cost Estimate. This Project Risk Factor was selected due to the need to have a detailed Cost Estimate to guide the sponsor through the development of the Project.

The Risk sub-factor will be used to determine intermediate values in the scoring.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | A Detailed Cost Estimate or a Commercial Grade Investment Study has been prepared |
| 2 | An estimate based on costs per mile will receive a More Deliverable score at a maximum depending on the sources and quality of the costs and quantities used. |
| 3 | Qualitative Scoring based on submitted information demonstrating Sponsor's understanding of the costs as demonstrated in the cost estimate. |
| 4 | ↓ |
| 5 | No Detailed Cost Estimate has been prepared |

8. Vehicle Procurement Strategy

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a Vehicle Procurement Strategy. This Project Risk Factor was selected due to the need to have a Vehicle Procurement Strategy to adequately determine the costs of the vehicle.

The existence of a Vehicle Procurement Strategy indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | A Full Vehicle Procurement Strategy has been prepared |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information |
| 4 | ↓ |
| 5 | No Vehicle Procurement Strategy has been prepared |

9. Identification of Early Action contracts

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the identification of Early Action contracts. This Project Risk Factor was selected due to the need to potentially have a plan that includes early action contracts to reduce project duration and to provide the follow on contract to have a cleared and construction ready site. If the Sponsor states that Early Action contracts are not needed for a project, and the Project Schedule supports this then this criteria will not be scored.

The identification of Early Action contracts indicates that the project estimates and schedule more accurately reflect the schedule or cash flow needs of the project.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | Identification of Early Action contracts has been made |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. |
| 4 | ↓ |
| 5 | No identification of Early Action contracts has been made |

10. Contract packaging determined

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the determination of Contract Packaging. This Project Risk Factor was selected due to the need to identify how the Engineering and Architecture Design must be developed to produce the contract documents.

The determination of Contract Packaging indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | Determination of Contract Packaging has been made |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information |
| 4 | ↓ |
| 5 | No determination of Contract Packaging has been made |

11. **NEPA Document in process**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the progress towards a final NEPA finding. This Project Risk Factor was selected due to the need to identify potential Schedule Risks with the NEPA process. This Project Risk Factor will not be scored if no Federal Funds are anticipated for the Project

The progress towards NEPA finding indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|---|
| 1 | |
| 2 | A Project with NEPA in process will receive a rating of 2 at a maximum depending on the type of document and its progression through the process. |
| 3 | Qualitative Scoring based on submitted information demonstrating the level of completion and the location within the process for the document. |
| 4 | ↓ |
| 5 | No NEPA in process |

12. **NEPA finding/decision received**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a Final NEPA finding. This Project Risk Factor was selected due to the need to identify potential Schedule Risks with the NEPA process. This Project Risk Factor will not be scored if no Federal Funds are anticipated for the Project

The existence of a NEPA finding indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|--|
| 1 | Project with a Final NEPA finding that is reflected in the Project Designs, Schedule, and Cost Estimate. |
| 2 | Project with NEPA finding that is not reflected in the Project Designs, Schedule, and Cost Estimate |
| 3 | Project with an Intermediate NEPA findings such as a Tier I ROD. |
| 4 | Project with Environmental Documents submitted, awaiting NEPA finding |
| 5 | Project yet to submit final environmental documents |

13. **GEPA Document in process**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the progress towards a final GEPA finding. This Project Risk Factor was selected due to the need to identify potential Schedule Risks with the GEPA process. This Project Risk Factor will only be scored if no Federal Funds are anticipated for the Project

The progress towards GEPA finding indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|---|
| 1 | |
| 2 | A Project with GEPA in process will receive a rating of 2 at a maximum depending on the type of document and its progression through the process. |
| 3 | Qualitative Scoring based on submitted information demonstrating the level of completion and the location within the process for the document. |
| 4 | ↓ |
| 5 | No GEPA in process |

14. **GEPA finding/decision received**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a Final GEPA finding. This Project Risk Factor was selected due to the need to identify potential Schedule Risks with the NEPA process

The existence of a NEPA finding indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|--|
| 1 | Project with a Final GEPA finding that is reflected in the Project Designs, Schedule, and Cost Estimate. |
| 2 | Project with GEPA finding that is not reflected in the Project Designs, Schedule, and Cost Estimate |
| 3 | |
| 4 | |
| 5 | |

15. **Supporting Environmental Documents**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a Supporting Environmental Documents. This Project Risk Factor was selected to recognize Projects that are not in the GEPA or NEPA processes, but that have completed some of the typical supporting studies required.

The existence of Supporting Environmental Documents indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Scoring | |
|----------------|--|
| 1 | Full set of Supporting Environmental Documents prepared. |
| 2 | ↑ |
| 3 | Qualitative Scoring based on the number and types of Environmental Supporting Documents prepared with higher ratings given if the Supporting Documents identified in the Risk sub-factor are prepared. |
| 4 | ↓ |
| 5 | No Supporting Environmental Documents prepared. |

16. **Project Coordination Issues & Studies**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the identification of Project Coordination Issues and the development of Studies. This Project Risk Factor was selected due to the need to identify issues early in the development of a project to produce realistic scopes schedules and budgets. If the Sponsor states that there are no issues that are unaddressed and the submitted data supports this position, then this Project Risk Factor will not be scored.

The identification of Project Coordination Issues indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|---|
| 1 | Identification of Project Coordination Issues has been made |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information |
| 4 | ↓ |
| 5 | No identification Project Coordination Issues has been made |

17. *Permitting*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by obtaining required Permits for the Project. This Project Risk Factor was selected due to the need to identify and obtain the necessary Permits for a Project. If the Sponsor states that there are no permits required and the submitted data supports this position, then this Project Risk Factor will not be scored.

The obtaining of Permits indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | All Permits obtained |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. The documentation of pre-application meetings or determinations will allow a project to score higher. |
| 4 | ↓ |
| 5 | No Permits obtained |

18. *Right of Way*

This Project Risk Factor is used to identify projects that have lower risk due to lower levels of Right of Way acquisition or the specific requirements for the use of the Right of Way, or specific types of Right of Way acquisition. This Project Risk Factor was selected to identify Projects that have risks due to Right of Way acquisition or agreements needed.

The type of Right of Way to be acquired and the owners of that Right of Way determine the potential risk and drive the costs and the need for agreements.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | Project uses only existing Public Right of Way |
| 2 | ↑ |
| 3 | Qualitative Scoring based on the number and types of Right of Way to be acquired or the agreements for the use of the right of Way. |
| 4 | ↓ |
| 5 | Project will require purchase of public and/or private right of way. |

19. *Design Standards*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of Design Standards. This Project Risk Factor was selected due to the need apply the mode specific Design Standards to the Project to produce realistic scopes schedules and budgets.

The existence of Design Standards indicates that the project estimates and schedule more accurately reflect the sponsor’s needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | All Project specific Design Standards are identified and developed. |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information on use of general sponsor agency Design Standards |
| 4 | ↓ |
| 5 | No Design Standards are identified or developed. |

20. *Inter-operability Standards*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of Inter-operability Standards. This Project Risk Factor was selected due to the need apply Inter-operability Standards to the Project to produce realistic scopes schedules and budgets.

The existence of Inter-operability Standards indicates that the project estimates and schedule more accurately reflect the sponsor’s needs.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | All Inter-operability Standards are identified and developed. |
| 2 | Draft Inter-operability Standards are under review. |
| 3 | Qualitative Scoring based on submitted information |
| 4 | ↓ |
| 5 | No Inter-operability Standards are identified or developed. |

21. Significant Facilities/Construction

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the identification of Significant Facilities or Construction. This Project Risk Factor was selected due to the need to identify how the Significant Facilities or Construction that must be developed to produce for the Project.

The identification of Significant Facilities or Construction indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | Identification of Significant Facilities or Construction has been made. |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. |
| 4 | ↓ |
| 5 | No identification of Significant Facilities or Construction has been made. |

22. Permits / Agreements

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by obtaining required Permits and Agreements for the Project. This Project Risk Factor was selected due to the need to identify and obtain the necessary Permits for a Project. If the Sponsor states that there are no permits or agreements are required and the submitted data supports this position, then this Project Risk Factor will not be scored.

The obtaining of Permits and Agreements indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | All Permits and Agreements obtained |
| 2 | Permits and Agreements in Draft or under review |
| 3 | Qualitative Scoring based on submitted information. Project that show more detailed discussions or draft agreements will score higher. |
| 4 | Permits and Agreements identified |
| 5 | No Permits and Agreements obtained |

23. *Other Features*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the identification of Other Features. This Project Risk Factor was selected due to the need to identify how the Other Features that must be developed or produced for the Project.

The identification of Other Features indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | Identification of Other Features has been made. |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. |
| 4 | ↓ |
| 5 | No identification of Other Features has been made. |

24. *Traffic Engineering*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by performing the Traffic Engineering required by the Project. This Project Risk Factor was selected due to the need to perform Traffic Engineering for the Project to produce realistic scopes schedules and budgets.

The performance of the Traffic Engineering indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|---|
| 1 | Detailed Traffic Engineering has been performed. |
| 2 | ↑ |
| 3 | Qualitative Scoring based on level of Traffic Engineering completed and identification of complex intersections or traffic interactions for the project |
| 4 | ↓ |
| 5 | No Traffic Engineering has been performed. |

25. *Plan Reviews*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by identifying the required Plan Reviews for the Project. This Project Risk Factor was selected due to the need to identify and obtain the necessary Plan Reviews for a Project. If the Sponsor states that there are no Plan Reviews required and the submitted data supports this position, then this Project Risk Factor will not be scored.

The obtaining of Permits indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | Identifying the required Plan Reviews performed |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. The documentation of pre-review meetings will allow a project to score higher. |
| 4 | ↓ |
| 5 | No Plan Reviews identified. |

26. *RAMP Plan*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a RAMP Plan (Right of Way Acquisition and Management Plan). This Project Risk Factor was selected due to the need to have a RAMP Plan to adequately determine the costs and schedules for obtaining the needed Right of Way.

The existence of a RAMP Plan indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | A Full RAMP Plan has been prepared |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information |
| 4 | ↓ |
| 5 | No RAMP Plan has been prepared |

27. *Railroad Right of Way*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by obtaining required Agreements for use of the Railroad Right of Way needed for the Project. This Project Risk Factor was selected due to the need to identify and obtain the necessary Agreements for use of the Railroad Right of Way for the Project to determine the design, operational, and legal requirements. If the Sponsor states that there are no permits or agreements are required and the submitted data supports this position, then this Project Risk Factor will not be scored.

The obtaining of Agreements indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | All Agreements obtained |
| 2 | Draft agreements under discussion |
| 3 | Qualitative Scoring based on submitted information. Project that show more detailed discussions or draft agreements will score higher. |
| 4 | ROW needs identified |
| 5 | No Agreements in process |

28. *Highway Right of Way*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by obtaining required Agreements for use of the Highway Right of Way needed for the Project. This Project Risk Factor was selected due to the need to identify and obtain the necessary Agreements for use of the Highway Right of Way for the Project to determine the design, operational, and legal requirements. If the Sponsor states that there are no permits or agreements are required, the sponsor is the owner of the Right of Way and the submitted data supports this position, then this Project Risk Factor will not be scored.

The obtaining of Agreements indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | All Agreements obtained |
| 2 | Draft agreements under discussion |
| 3 | Qualitative Scoring based on submitted information. Project that show more detailed discussions or draft agreements will score higher. |
| 4 | ROW needs identified |
| 5 | No Agreements in process |

29. *Utility Right of Way*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by obtaining required Agreements for use of the Utility Right of Way needed for the Project. This Project Risk Factor was selected due to the need to identify and obtain the necessary Agreements for use of the Utility Right of Way for the Project to determine the design, operational, and legal requirements. If the Sponsor states that there are no permits or agreements are required and the submitted data supports this position, then this Project Risk Factor will not be scored.

The obtaining of Agreements indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|-------------------------------|--|
| 1 | All Agreements obtained |
| 2 | Draft agreements under discussion |
| 3 | Qualitative Scoring based on submitted information. Project that show more detailed discussions or draft agreements will score higher. |
| 4 | Utility Conflicts or ROW needs identified |
| 5 | No Agreements in process and Utility Conflicts yet to be identified |

30. **Environmental Issues**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by identifying Environmental Issues for the Project. This Project Risk Factor was selected due to the need to identify and mitigate/remediate Environmental Issues on the Project. If the Sponsor states that there are no Environmental Issues and the submitted data supports this position, then this Project Risk Factor will not be scored.

Identifying Environmental Issues indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|---|
| 1 | Identifying the Environmental Issues performed |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. |
| 4 | ↓ |
| 5 | No Environmental Issues reviewed or identified. |

31. **Construction Schedule Issues**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by identifying Construction Schedule Issues for the Project during Construction. This Project Risk Factor was selected due to the need to identify construction Schedule Issues on the Project. If the Sponsor states that there are no Construction Schedule Issues and the submitted data supports this position, then this Project Risk Factor will not be scored.

Identifying Environmental Issues indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|---|
| 1 | Identifying the Construction Schedule Issues performed |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. |
| 4 | ↓ |
| 5 | No Construction Schedule Issues reviewed or identified. |

32. **Construction Permitting / Agreements**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by obtaining required Construction Permitting and Agreements needed for the Project. This Project Risk Factor was selected due to the need to identify and obtain the necessary Construction Permitting and Agreements. If the Sponsor states that there are no permits or agreements are required and the submitted data supports this position, then this Project Risk Factor will not be scored.

The obtaining of Construction Permitting and Agreements indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|--|
| 1 | All Construction Permitting and Agreements obtained |
| 2 | Permits and Agreements in Draft or under review |
| 3 | Qualitative Scoring based on submitted information. Project that show more detailed discussions or draft agreements will score higher. |
| 4 | Permits and Agreements identified |
| 5 | No Construction Permitting and Agreements in process |

33. **Construction Quality / Management Plan**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by producing the required Construction Quality and Management Plans needed for the Project. This Project Risk Factor was selected due to the need to produce the necessary Construction Quality and Management Plans.

Producing the required Construction Quality and Management Plans indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|---|
| 1 | Project specific Construction Quality and Management Plans produced |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information and any Draft documents submitted. |
| 4 | ↓ |
| 5 | No Project specific Construction Quality and Management Plans produced |

34. **Commissioning Plan**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by producing the required Commissioning Plan needed for the Project. This Project Risk Factor was selected due to the need to produce a Commissioning Plan for the final acceptance of the project.

Producing the required Commissioning Plan indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|---|
| 1 | Commissioning Plan produced |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. |
| 4 | ↓ |
| 5 | No Commissioning Plan produced |

35. **Operations Testing Plan**

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by producing the required Operations Testing Plan needed for the Project. This Project Risk Factor was selected due to the need to produce an Operations Testing Plan for the final acceptance of the project.

Producing the required Operations Testing Plan indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|---|
| 1 | Operations Testing Plan produced |
| 2 | ↑ |
| 3 | Qualitative Scoring based on submitted information. |
| 4 | ↓ |
| 5 | No Operations Testing Plan produced |

36. *Third Party Responsibilities*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the identification of Third Party Responsibilities. This Project Risk Factor was selected due to the need to integrate Third Party Responsibilities into the project schedule and agreements.

The identification of Early Action contracts indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|--|
| 1 | MOU or MOA agreement in place for addressing Third-party Responsibilities |
| 2 | MOU or MOA agreement in discussion for addressing Third-party Responsibilities |
| 3 | Qualitative Scoring based on submitted information |
| 4 | Identification of Third Party Responsibilities has been made |
| 5 | No identification of Third Party Responsibilities has been made |

37. *Systems in Commissioning Plan*

This Project Risk Factor is used to identify projects that are more fully developed as evidenced by the existence of a detailed list and description of Systems that will be in the Commissioning Plan. This Project Risk Factor was selected to recognize Projects that do not have a Commissioning Plan, but that have investigated the requirements for their Commissioning Plan.

The existence of a detailed list and description of Systems that will be in the Commissioning Plan indicates that the project estimates and schedule more accurately reflect the sponsor's needs.

| Severity of the Delivery Risk | |
|--------------------------------------|--|
| 1 | Fully detailed list and description of Systems that will be in the Commissioning Plan. |
| 2 | ↑ |
| 3 | Qualitative Scoring based on the information supplied. |
| 4 | ↓ |
| 5 | No detailed list and description of Systems that will be in the Commissioning Plan prepared. |