Post Construction Design-Build Evaluation Report

Project Description: SR 47 @ Little River – Bridge Replacement
P.I. Number: 232310-
County: Columbia/Lincoln
GDOT District: District 2

Date Conducted: October 13, 2016
1. **Project Description:** State Route (SR) 47 over Little River (Clarks Hill Lake) begins at approximately Mile Post (MP) 16.25 in Lincoln County and ends at approximately MP 0.85 in Columbia County. The project was to design-build a new bridge over Little River including the removal of the existing bridge and columns within the lake.

2. **Design-Build delivery goal(s):** Expedite delivery and to make use of available funds.

3. **Project stakeholders:**
   - GDOT – Office of Innovative Delivery, Bridge, Construction, Engineering Services, DP&S, OES and others
   - Scott Bridge Company, Inc. – Prime Contractor
   - Michael Baker Jr., Inc. – Prime Designer
   - USACE
   - DNR

4. **Project Summary:**

<table>
<thead>
<tr>
<th>Project Milestone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Let</td>
<td></td>
</tr>
<tr>
<td>Public Notice Advertisement (PNA)</td>
<td>01/25/2013</td>
</tr>
<tr>
<td>Request for Qualification (RFQ) issued</td>
<td>05/24/2013</td>
</tr>
<tr>
<td>Statement of Qualifications (SOQ) due</td>
<td>07/10/2013</td>
</tr>
<tr>
<td>Selection of Finalists</td>
<td>07/31/2013</td>
</tr>
<tr>
<td>Request for Proposals (RFP)</td>
<td>08/23/2013</td>
</tr>
<tr>
<td>NEPA Approval</td>
<td>10/11/2013</td>
</tr>
<tr>
<td>Letting (A+B)</td>
<td>11/22/2013</td>
</tr>
<tr>
<td>Post-Let</td>
<td></td>
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<tr>
<td>Award</td>
<td>12/11/2013</td>
</tr>
<tr>
<td>NTP 1 – Preliminary Design</td>
<td>01/24/2014</td>
</tr>
<tr>
<td>NTP 2 – Final Design</td>
<td>01/28/2014</td>
</tr>
<tr>
<td>Conditional NTP 3 – Construction</td>
<td>10/31/2014</td>
</tr>
<tr>
<td>NTP 3 – Construction</td>
<td>12/05/2014</td>
</tr>
<tr>
<td>NEPA Re-Evaluation #1 Approval</td>
<td>07/31/2014</td>
</tr>
<tr>
<td>NEPA Re-Evaluation #2 Approval</td>
<td>08/20/2015</td>
</tr>
<tr>
<td>NEPA Re-Evaluation #3 Approval</td>
<td>06/18/2016</td>
</tr>
<tr>
<td>Shift Traffic To New Bridge</td>
<td>07/07/2016</td>
</tr>
<tr>
<td>Original Contract Completion Date</td>
<td>08/21/2016</td>
</tr>
<tr>
<td>Actual Project Completion</td>
<td>TBD</td>
</tr>
<tr>
<td>Contract Completion Date via SA</td>
<td>11/18/2016</td>
</tr>
</tbody>
</table>

5. **Design-Build Proposers:**

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Designer</th>
<th>Total Bid</th>
<th>Total Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scott Bridge Company, Inc.</td>
<td>Michael Baker Jr., Inc.</td>
<td>$24,066,000.00</td>
<td>940 Days</td>
</tr>
<tr>
<td>Archer Western Contractors, LLC</td>
<td>Reynolds Smith &amp; Hill, Inc.</td>
<td>$29,184,000.00</td>
<td>1080 Days</td>
</tr>
<tr>
<td>E.R. Snell Contractor, Inc.</td>
<td>Moreland Altobelli Associates, Inc.</td>
<td>$35,195,898.00</td>
<td>1278 Days</td>
</tr>
<tr>
<td>Superior Construction Company</td>
<td>Parsons Transportation Group, Inc.</td>
<td>$76,004,000.00</td>
<td>1105 Days</td>
</tr>
</tbody>
</table>
6. **Stipulated Fee**
   a. Was a stipulated fee (stipend) offered to proposing Design-Build Teams? □ Yes  □ No
      If yes, how much per firm: - N/A

7. **Design-Build Request for Proposals (RFP)**
   a. Type of procurement: □ One Phase/Low Bid  □ Two Phase/Low Bid  □ Best Value
      Note: Project award was based on an A+B formula. The idea was to allow the industry to specify their
duration to best suit their means and methods to performing the work.

      \[
      A + B = \text{Bid Value}
      \]
      \[
      A = \text{dollar amount for contract items}
      \]
      \[
      B = \text{calendar days to design & build the project x LD's}
      \]
      \[
      LD's = \text{standard daily LD's (per GDOT 2013 spec manual is $1869/day)}
      \]
   b. Advertisement duration: □ 30 days  □ 60 days  □ 90 days
   c. Was a draft RFP released for this project? □ Yes  □ No
      If yes # of releases: - N/A
   d. Was a Q&A format provided?  □ Yes  □ No
   e. Were One-on-One meetings held with proposers? □ Yes  □ No
   f. List GDOT offices involved in the RFP development: Design Policy & Support, Engineering Services,
      Environmental Services, Innovative Delivery, Utilities, Construction, Bridge, District 2

8. **Design-Build RFP Package**
   a. List items included in the RFP package:

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costing plans</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved bridge layouts</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Approved concept report/concept revision</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Approved Environmental Document</td>
<td></td>
<td></td>
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<tr>
<td>CAiCE/InRoads files</td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Microstation files</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Approved Design Exceptions/Variances</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Approved BFI</td>
<td></td>
<td>X</td>
<td>Based on original bridge design concept</td>
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<tr>
<td>Approved WFI</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Approved Soils Report</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Geotechnical borings</td>
<td></td>
<td>X</td>
<td>To minimize risk, GDOT provided 6 additional</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>boring logs. Samples housed at OMAT.</td>
</tr>
<tr>
<td>Approved Pavement Design</td>
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<td>Pavement Design Alternative</td>
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<tr>
<td>Overhead/Subsurface Utility Engineering (SUE)</td>
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<td>Quality Level “B” (QL-B)</td>
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<td>Utility Memorandum of Understanding (MOU)</td>
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<td>Costing Plan Review Report</td>
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<tr>
<td>Draft Transportation Management Plan (TMP)</td>
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<td>X</td>
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<tr>
<td>Other</td>
<td></td>
<td>X</td>
<td>Existing Bridge Plans, Hydraulic data, meeting</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>minutes, PAR, and VE Study</td>
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</tbody>
</table>
b. General observations of the RFP contents and/or procurement process:
   o Project used SP 999 (Design-Build)
   o Geotech conditions were a concern as GDOT developed the RFP. GDOT obtained additional boring data and provided to proposing Design-Build Teams. This additional information was a big factor in keeping cost estimates low. The Design-Build Team would recommend having this information provided with all Design-Build projects where an approved BFI specific to the project is not provided.
   o A+B was the first use on a Design-Build project. On this project apparent low bidder had the lowest number of days to design and build the project.
   o SP 999 wouldn’t allow removing the bridge during certain times, but didn’t state why. A little more clarification could have helped reduce costs.
   o During the time of advertisement and design of the project, GDOT did not have an approved LRFD software for use on bridge design. The Engineer of Record requested that future projects allow the engineer to design a substructure with a software at their discretion.
     i. After discussions with the Bridge Office: The Department review the available LRFD bridge design programs and provide a list of acceptable programs to use on GDOT projects.

c. Were conflicts in project scope identified:  ☑ Yes  ☒ No
   If yes, what sections should be revised for future RFPs:

9. Environmental
   a. Type of document: ☒ NEPA: Level: ☐ PCE  ☒ CE  ☐ EA/FONSI  ☐ EIS/ROD
      ☐ GEPA: Level: ☐ Type A  ☐ Type B  ☐ EER/NOD
   b. Was the environmental document approved prior to the RFP advertisement?  ☑ Yes  ☒ No
   c. Was a re-evaluation performed post-let?  ☑ Yes  ☒ No
      If yes, describe scenario why a re-evaluation was required:
      o During a field plan review with the Design-Build Team, GDOT/FHWA/Design-Build Team discussed removing 2 bents near each end bent. This precipitated the need for a reduction in costs (approximately $70k), hydraulic variance and a NEPA re-evaluation to document the change. In the end, this was a great decision.
      o Second re-evaluation was due to the Design-Build Team revising, during the construction phase, the foundation type for Bent 12 from drilled shaft to pile driven footing.
      o Third re-evaluation was due to the USACE/EPD requesting GDOT remove an enhanced swale/ditch in front of USACE owned property.
      If yes, did the Design-Build team perform the re-evaluation?  ☑ Yes  ☒ No
      Did the Design-Build team provide supporting documentation?  ☐ Yes  ☐ No
   d. General observations of the pre-let or post-let environmental process:
      o Early coordination with USACE was a great benefit to the success of the project. While the project was under environmental re-evaluations, construction was allowed to proceed unhindered.

10. Environmental Permitting
    a. Type of 404 permit required: ☒ NWP  ☐ IP  ☐ Other  ☐ None
    b. Was mitigation required as part of the permit?  ☐ Yes  ☐ No
       If yes, did the Design-Build team perform mitigation and/or acquire credits?  ☐ Yes  ☐ No
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c. Was a Stream Buffer Variance (SBV) required? ☑ Yes ☐ No

d. List any other permits required by the project (not counting NPDES Permit):
   o Section 408 coordination between GDOT and USACE did occur.


e. General observations of the environmental permitting process:
   o The Design-Build Team suggested a quantity for mitigation credits be established with same unit costs because cost varies among the different type of credits. This could minimize bid amounts by reducing risks to the bidding Design-Build Teams.

11. NPDES Permit

   a. Did the Design-Build team prepare the Notice of Intent (NOI)? ☑ Yes ☐ No ☐ NA
   b. Did the Design-Build team pay the NPDES permitting fee? ☐ Yes ☑ No ☐ NA
   c. Were the ESPCP regularly redlined? ☑ Yes ☐ No ☐ NA
   d. Did any self-report actions occur? ☐ Yes ☑ No

      If yes, describe the reason(s) and outcome(s): -

   e. Was a consent order filed? ☐ Yes ☑ No

      i. Additional comments: None

12. Right of Way (R/W)

   a. Was R/W required? ☑ Yes ☐ No

      If yes, who was responsible for R/W? ☑ GDOT ☐ Locals ☐ Design-Build team

      If yes, was it acquired prior to award of the Design-Build contract? ☑ Yes ☑ No

      If yes, did R/W acquisition activities impact the project schedule? ☑ Yes ☑ No

   b. How were R/W commitments or cost-to-cure elements handled on this project: -

      o 4 parcels were impacted which required temporary easement. All R/W was owned by USACE. No specific cost-to-cure items were required; however, one commitment the USACE requested included placing gravel in an existing USACE parking lot which was included in the Environmental Commitments Table.

   c. List any special circumstances, conditions, or property owner commitments of R/W acquisition: - None

   d. General observations of the R/W acquisition process:

      o Design-Build contract included a hard date for right of entry. Section 408 coordination with the USACE was required before the acquisition could be complete. Although the contractual Right of Entry dates included in the contract were not met b/c of Section 408 coordination, the Right of Way was never on the critical path.

      o The Design-Build Team would prefer the Right of Way dates are completed by the date provided in the contract or take the risk off them (Design-Build Team) by allowing more time. Although it did not affect them in the time to complete the construction, missing these dates could really affect schedules on future projects.

13. Utilities

   a. Was SUE performed pre-let and included in the RFP package? ☑ Yes ☐ No

      If yes, what level? ☑ QL-D ☐ QL-C ☑ QL-B ☐ QL-A

      If No, was a ‘SUE waiver’ approved by the State Utilities Office? ☐ Yes ☑ No

      If No, what was the mitigating activity (e.g. white lining specification, “no-conflict” letters, first submission plans): -
b. Were Design-Build Utility MOU’s executed?  ☒ Yes  ☐ No

c. List the utility owners, if any, which were included in the Design-Build contract: Columbia County Broadband, Georgia Power Transmission (GPT)

d. Generally describe observations with respect to Design-Build utility coordination:
   - Early coordination with GPT occurred during development of RFP. This was critical because it brought about several contractual requirements including installation of gates along the new mainline to the old roadbed to allow GPT access to maintain their facility, as well as timeframes where the GPT could not de-energize their facility.

e. Generally describe any areas of improvement with respect to Design-Build utility coordination:
   - Identification of utilities that present the highest risk and meet with them during development of the RFP.

f. What was the frequency of utility coordination meetings:
   - The number of and impacts to utilities were minimal on this project and regular meetings were not necessary.

14. Geotechnical
   a. Was an approved Soils Report included in the RFP package?  ☒ Yes  ☐ No
      If no, was a Soils Report required for the project?  ☐ Yes  ☒ No
   b. Was an approved BFI included in the RFP package?  ☒ Yes  ☐ No
      If no, was a BFI required for this project?  ☐ Yes  ☒ No
   c. Was an approved WFI included in the RFP package?  ☐ Yes  ☒ No
      If no, was a WFI required for this project?  ☒ Yes  ☐ No
   d. Was an approved High Mast Found Investigation report included in the RFP package?  ☐ Yes  ☒ No
      If no, was a HMFI required for this project?  ☒ Yes  ☐ No
   e. Were there any geotechnical issues encountered on construction?  ☒ Yes  ☐ No
      If yes, describe issues and outcome:
      - From a schedule perspective the time it takes to drill for drilled shafts presented a challenge to sequencing the work.
      - The Design-Build Team also noted that the more info (specifically BFI) presented upfront gives the Design-Build team more options and better value.

15. Design and Construction Phases
   a. Did the Design-Build Team advance portions of the project to the construction phase while other portions of the project continued to be designed and/or permits obtained?  ☒ Yes  ☐ No
      If yes, describe: The Design-Build Team received a conditional NTP 3 to proceed to construction for roadway/approach work while the design of bridge plans and Right of Way acquisition proceeded. This is a value to the schedule from utilizing Design-Build delivery.
   b. Describe the typical frequency for progress meetings?  Monthly
   c. Were the Design-Build team plans/submittals of acceptable quality?  ☒ Yes  ☐ No
      If no, describe issue and any corrective actions taken: -
   d. Were GDOT’s review times adequate?  ☒ Yes  ☐ No
      If no, describe:
General observations of review times:
  o All review times by GDOT were met. USACE and FHWA were very supportive to expedite some level of their reviews.
  e. Was the Asphalt Index specification included in this project? Yes ☒ No ☐
  f. Was the Fuel Index specification included in this project? Yes ☒ No ☐
  g. Was construction staging/Maintenance of Traffic (MOT) acceptable? Yes ☒ No ☐
    If no, describe:
  h. Was the Schedule of Values adequate? Yes ☒ No ☐
    If no, describe:
  i. Was the pay voucher and overall payment process acceptable? Yes ☒ No ☐
    If no, describe:
  j. Was the Critical Path Method (CPM) schedule specification used on this project? Yes ☒ No ☐
    If yes, describe general experiences (pro or con) using the CPM specification:
    o Overall it was a good experience, but one issue that did come up was showing completion dates beyond the contract date. This issue was discussed including an option that forced the completion date to meet the contract date, essentially a second schedule, but in the end the dates were shown beyond the contract date with an explanation from the Design-Build Team.
    If yes, any suggested improvements to the use of CPM schedule:
    o None
  k. Were there any unique issues (to Design-Build) that occurred? Yes ☒ No ☐
    If yes, describe:
    o Bent 12 was redesigned using a pile footing instead of the drilled shaft/caisson. This minimized the amount of work required at this bent and it also helped the Design-Build Team to avoid delays by using on site resources.
  l. Were sound barriers required on this project? No ☐ Yes ☒
    If yes, describe the material/color:
    If yes, was the sound barrier material/color specified in the contract? No ☐ Yes ☒
    If yes, was the sound barrier height/location specified in the contract? No ☐ Yes ☒
  m. Were there lane closure restrictions on this project? Yes ☒ No ☐
    If yes, were they adequate or could they have been modified for efficiency:
    o Much of the work was performed outside of traffic. During development of the RFP, the goal of expedited delivery was a core focus.
  n. Were there ITS outage restrictions on this project? No ☐ Yes ☒
    If yes, were they adequate or could they have been modified for efficiency: N/A
  o. Were there new or existing Traffic Signal modifications required? No ☐ Yes ☒
    If yes, were the traffic signal permits obtained by GDOT: No ☐ Yes ☒
  p. Were As-built plans prepared by the Design-Build team? No ☐ Yes ☒

16. Design-Build Innovations
  a. Were there innovative designs, solutions or materials used on this project? Yes ☒ No ☐
If yes, describe:
  o The redesign of Bent 12 mentioned above allowed the Design-Build team to save time and meet the overall project completion date.
  o The existing truss bridge was removed without impacting service provided by the Georgia Power distribution line along the side of it.
  o The Design-Build Team worked with the USACE to use old material to create new fish habitats upstream from the project. This created a win-win for the project and the USACE.

b. Were any Value Engineering Proposals (VEP) submitted? ☐ Yes ☒ No

<table>
<thead>
<tr>
<th>No.</th>
<th>VEP Description</th>
<th>Total Savings</th>
<th>Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

e. List other benefits that are not reflected in the cost savings:
  o

17. **Supplemental Agreement Summary**

<table>
<thead>
<tr>
<th>SA No.</th>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>($88,265.41)</td>
<td>Removal of 2 bridge bents from the lake, Stream Buffer Credit Revision due to bent removal and a drainage features not being constructed per request of USACE, and 5 girders with deficient cylinder breaks</td>
</tr>
<tr>
<td>2</td>
<td>$0</td>
<td>Total of 89 calendar days added to the Contract via Global Settlement Agreement between GDOT and Scott Bridge Co.</td>
</tr>
</tbody>
</table>

18. **DBE**

a. What was the project’s DBE goal? 9%
b. Was it or will it be met? ☐ Yes ☐ No ☒ Pending final report

Generally describe utilization:
  o

19. **Summary of observations from Office of Innovative Delivery (OID)**

a. Early risk identification was helpful. This led to the following:
   o Coordination with the USACE (Savannah Branch/Lake Division) during RFP development specifically to discuss the Design-Build approach
   o Coordination with Georgia Power Transmission (GPT)
   o GDOT obtaining 6 additional geotechnical borings with data provided as part of RFP
b. First use of A+B contracting.
c. Relatively quick turnaround from time OID received the project (project originally managed by GDOT Office of Program Delivery and designed in-house by D2) to advertisement/award.

20. **Summary of observations from District Office**

a. None

21. **Summary of observations from Design-Build Team**

a. This was the perfect project for utilization of the Design-Build method.

22. **Recommendations**

a. None

23. **Notable achievements by early interaction of design and contractor**
a. Monthly meetings were the key to a good project.

b. Early coordination with EPD minimized ecology impacts which allowed the project to go from an Individual Permit to a Nationwide Permit.

c. The Design-Build Team coordinated with the local USACE lake manager to utilize the demolition concrete bridge material (steel reinforcing removed) to create fish habitats. The fish habitat locations were provided by the USACE where it was identified the lakes biological ecosystem would benefit.

24. **Post Design-Build Evaluation participants:**

<table>
<thead>
<tr>
<th>NAME</th>
<th>OFFICE/COMPANY</th>
<th>PHONE</th>
<th>EMAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walt Taylor</td>
<td>GDOT_Engineering Services</td>
<td>404.631.1922</td>
<td><a href="mailto:wtaylor@dot.ga.gov">wtaylor@dot.ga.gov</a></td>
</tr>
<tr>
<td>Matt Sanders</td>
<td>GDOT_Engineering Services</td>
<td>404.631.1752</td>
<td><a href="mailto:msanders@dot.ga.gov">msanders@dot.ga.gov</a></td>
</tr>
<tr>
<td>Al Bowman</td>
<td>Michael Baker</td>
<td>678.642.0455</td>
<td><a href="mailto:abowman@mbakerintl.com">abowman@mbakerintl.com</a></td>
</tr>
<tr>
<td>Stephen Summers</td>
<td>Scott Bridge</td>
<td>334.749.5045</td>
<td><a href="mailto:ssummers@scottbridge.com">ssummers@scottbridge.com</a></td>
</tr>
<tr>
<td>Tom Montgomery</td>
<td>Michael Baker</td>
<td>404.354.8613</td>
<td><a href="mailto:tmontgomery@mbakerintl.com">tmontgomery@mbakerintl.com</a></td>
</tr>
<tr>
<td>Marlo Clowers</td>
<td>GDOT_Inovative Delivery</td>
<td>404.293.7406</td>
<td><a href="mailto:mclowers@dot.ga.gov">mclowers@dot.ga.gov</a></td>
</tr>
<tr>
<td>Shane Swan</td>
<td>HNTB/GDOT_Inovative Delivery</td>
<td>404.783.7437</td>
<td><a href="mailto:sswan@hntb.com">sswan@hntb.com</a></td>
</tr>
<tr>
<td>Rodney Way</td>
<td>GDOT_District 2 Construction</td>
<td>706.855.3466</td>
<td><a href="mailto:rway@dot.ga.gov">rway@dot.ga.gov</a></td>
</tr>
<tr>
<td>Bryan Gibbs</td>
<td>GDOT_Construction</td>
<td>404.631.1971</td>
<td><a href="mailto:bgibbs@dot.ga.gov">bgibbs@dot.ga.gov</a></td>
</tr>
<tr>
<td>Corbett Reynolds</td>
<td>GDOT_District 2 Construction</td>
<td>478.555.3356</td>
<td><a href="mailto:creynolds@dot.ga.gov">creynolds@dot.ga.gov</a></td>
</tr>
<tr>
<td>Michael Lee</td>
<td>GDOT_District 2 Design</td>
<td>478.553.3355</td>
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</tr>
<tr>
<td>Foster Grimes</td>
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<td>478.553.3402</td>
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<tr>
<td>Billy Baxter</td>
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