GTPQ CRC Materials Subcommittee Meeting

Meeting Minutes from April 16, 2020

Present:

Adebola Adelakun, GDOT
Catherine Armstrong, GDOT
Bob Barnes, ECS
Neoma Cole, GDOT
Mary Cooley, GDOT
Jeff Doubrava, SM&E
Michael Murray, GDOT
Ryo Farrow, GDOT

Monica Flournoy, GDOT
Glen Foster, GDOT
Tom Hruby, NOVA
Moussa Issa, GDOT
Prashanth Vaddu, MC Squared
Eugene Utsalo, GDOT

Next meeting: July 16, 2020, 10:00AM (Quarterly Meeting)

Minutes Prepared by: Robert H. Barnes, P.E., P.G., ECS Southeast, LLP

   A. Discussion on updates with the PES guidelines/Pavement Design Manual.
      The PES guidelines/Pavement Design Manual will be completed soon; Eugene to check with Ian.
      PDM – is still scheduled for June 2020 release. This will reference MEPDG that is being drafted by UGA. The PDM is planned to be a concise version. Attempt is to make the manual very user friendly.

2. GDOT Research Project 19-07 – Methods for Drilled Shaft Excavation Inspections – (Michael Murray is the research lead on this one.)
   Discussions on criteria for drilled shaft inspection under wet conditions, specifically relating to center of shaft, vertical plumbness, and sediments at the base of the shaft:
      Center location – to remain at “within 3 inches of plan location”.
      Plumbness – to remain at “1/4 inch per 12 inches length”
      Sediment at Bottom of Shaft
         End Bearing Shafts – Sediment tolerance should be “no more than 1 inch of sediment or debris at the base for end bearing shafts”. – (Current OMATs unwritten rule is 1-inch.).
         Side Friction Shafts – Recommendation to increase to 3 inches maximum.

Discussion: OMAT asked for the committee’s input on establishing criteria regarding skin friction shafts as 1-inch across the board may be too stringent. One to three
inches appears to be reasonable from past experience. It may be worth relaxing the amount of sediment left at the bottom of the hole. The question was asked “Is there any research regarding amount of sediment impacting the type of concrete at the bottom?” No. This will be an action item to be addressed by the researchers. OMAT will share the tolerance of 3-inches agreed in the discussion.

GDOT only uses one or the other (100% end bearing or 100% side friction with regards to capacity calculation of shafts).

Demonstration shafts and load tests still being performed by GDOT; especially skin friction shafts. This information will be used to provide information on the response of the shaft.

Researchers are to confirm the effect of contamination of sediment on the concrete. GDOT to share with the researchers, the recommendation of 3 inches of sediment should be considered maximum acceptable criteria.

Consultants should reach out to other consultants and industry for past experience.

3. **Training**

   A. **Pavement** - Ian reports that he has successfully had TEAMs based training for Pavement Design Packages with the CRC Training subcommittee in March. He is updating his presentation based on feedback and hopefully will schedule more this month.

   B. **Cost Estimate Spreadsheet and Assumptions Training for Primes**

      a. Catherine to take lead on this. Since training will be easier to do in a classroom setting this will be after the COVID-19 settles down; likely in late 2020 or early 2021.

      b. The team has not heard of any complaints with regards to using the new cost estimating spreadsheet. Comments should be sent to Catherine Armstrong or Tom Hruby.

   C. **Templates and Guideline Training for Geotechnical Firms** - Classroom setting for this one as well; likely in late 2020 or early 2021.

4. **New Business**

   **Geotechnical** (Mary Cooley)

   OMAT wants to foster better collaboration on Geotechnical Reports based on some of our Office’s experiences in the past year. One thing we have noticed is that when there are unusual conditions that may result in complex design requirements or significant constructability concerns that the report reviews are smoother when we start collaborating early, rather than after the first report submission. OMAT would prefer early conversations prior to submission so Reviewers have an understanding of the issues.

   Some examples of issues OMAT would like to collaborate on before report submission are:
A. **Liquefaction concerns** – these came up more in Low Impact Bridge Program (LIBP bridges – the risk for LIBP bridges is much smaller; if these come up on bigger bridges then we need early engagement.
   a. Pay close attention to “should” (recommended) versus “shall” (required).
   b. GDOT generally gets push back from contractors if they plan to do liquefaction based remediation. Cost implications on LIBP bridges is too much and hence critical to discuss upfront. The department does NOT have any guidelines at this point. This will have to be handled on a case by case basis. Most seismic zones in Georgia are inactive. AASHTO guidelines to be used at this time.
   c. Most critical region is in the coastal region near Savannah.

B. **Extensive ground improvements** – needs to be discussed so everyone is on the same page as to the need, method, and the extent of improvement required.

C. **Load transfer platforms** – these are NOT generally well liked here locally; need good explanation as to why these are being recommended. They may have to be detailed more so that contractors can bid properly. However, a limited amount can be put on the details since these are a specialty contractor design. Consultants: These are performance based; therefore need to be cautious on how much detail is provided.

D. **Foundation designs not addressed in the BFI Template** - let OMAT know early on in the process as to why these new methods are being used (example micropiles – discuss with OMAT how to input into a modified BFI report).

E. **Large fill placements or large cuts on Soil Surveys**

OMAT’s flexibility in relaxing certain criteria can be discussed based on early engagement from consultants.

Another issue OMAT wants to collaborate on is ensuring that the reports have sufficient supporting data for the Reviewer. Those would be things like the following:

A. Providing sufficient information to understand the modification on resistance factors.
   a. Need backup data;
   b. Provide AASHTO reference sections so that OMAT Reviewer can follow everything consultants are recommending or using.

B. Finite element analyses
   a. Need a lot of information to assist with backup and understanding.

C. Use of resistance factors in APILE analyses
   a. OMAT uses a reduction factor of 1 in the APILE program. Some consultants appear to be using multiple reduction factors (Including a reduction factor for soil type) leading to redundant design.
D. Providing all the data for the Shallow Foundation Spreadsheets
   a. This should include input page (first tab on the spreadsheet) and all calculations for all parameters (second tab on the spreadsheet); also print out the data from the tab for the appropriate foundation shape (e.g. square, rectangular). OMAT wants all the data. OMAT is fine with receiving the excel files (GDOT Spreadsheet); but, consultants must include printouts of all the data in the report.
   b. The GDOT spreadsheet models sands and silty sands best, and should only be used for immediate settlement analyses. Other methods will have to be employed for consolidation (Primary settlement and secondary/Long Term Creep).
   c. Software is not meant for consolidating soils and alternative calculations should be provided.

E. Providing sufficient information to understand design data assumptions.

OAMT does not mandate the consultant community to use the same software they use internally. However, if Consultant use the software OMAT uses, this will make the review process easier.

If alternative software is used, Consultants must provide sufficient data and backup so that the Reviewer can understand what is being submitted. Additional information should be provided.

5. Miscellaneous
A. Three major research projects currently underway.
   a. Drilled Shaft research project noted above.
   b. Pilot holes in Rock – since PDA can’t be used the University is to come up with alternative way to confirm pile capacity.
   c. Geotechnical asset management project – funding just approved – 2 ½ year project
B. OAMT Review times (geotechnical, pavement, environmental) have not changed across all departments.
   PES – there are some impacts to reviews where OMAT has to rely on internal field crews; the crews’ schedules are being impacted by COVID 19.
C. SP 622 – Being sent to Industry for comments. – may be in the engineering services backlog. Ade to update the group.
D. Embedded data collector (EDC) – this is only for PSC piles; they are a viable alternate; trying to incorporate into SP as an alternate to PDA. OMAT does NOT want to make the use of EDCs on 100% of piles mandatory for projects.

E. Environmental – RFP for environmental drilling and testing services to come out soon. Moussa is working on a new quote for environmental consultants to perform drilling (some drilling NOT all) and testing; labs will have to be certified – RFP imminent.

F. Lab testing – NOT only does the laboratory need to be accredited, but also the individual test method being performed needs to be accredited as well. If laboratory is not accredited for a particular test, that test may need to go to a qualified laboratory.

G. Training will be coming up for MEPDG – likely in fall.

H. Lab and RTT contracts – District 7 came out beginning of the year; Districts - 1, 3, and 6 to come out first followed by Districts 2, 4, & 5.

I. RTT written testing – was handled through local colleges; with COVID-19 the current situation is still being discussed. Shortage of RTTs is a known issue; Contact local colleges about current testing schedule.

Next Meeting Date: July 16, 2020