Project Status Report: CEEn-2018CPST-013 **Report Date: Mar 18, 2019**

Team Members: Craig Staples, Alec Escamilla, Paul Andersen

Project Title: Springville Performance Evaluation & Pavement Design for Minor Collectors

1) Summary of technical/non-technical challenges encountered

This week Craig was able to troubleshoot the mechanistic empirical analysis spreadsheet with Dr. Guthrie. From their investigation they learned some important design rules about using cement treated base underneath the asphalt layer. Their findings will be essential to the eventual design we will provide to Springville.

Alec and Paul have been making adjustments to the ESAL calculator. This week they found some relevant comparative studies on daily traffic. They found that these additional studies can provide statistical consistency to the team's previously conducted traffic study. These other studies will be incorporated into their ESAL estimator and into the end design for the roads in question.

2) Team approaches & resolutions to overcome challenges

Our approach to these problem was the following:

1. Craig's meeting with Dr. Guthrie resulted in a fundamental change to the asphalt and CTB design originally proposed by Dr. Guthrie's research team last fall. The spreadsheet built by Craig works with a design software *Kenpave* that has identified an optimal road design.
2. Alec and Paul worked through calculations for the ESAL calculator and checked their calculations against the *k-factor* as suggested by Dr. Schultz. In checking their estimations they were led to additional studies done on this area that may be considered more reliable than our one 48-hour traffic study.

3) Status of challenge resolutions & potential project impact

With our spreadsheets up-to-date, our next approach will be to schedule a time to meet with Dr. Guthrie to move on to the next phase of our project, which will be calculating ESALs and designing adequate road layer thicknesses. We are also still waiting on the weather before we are able to take cores from the road segments in Springville.

4) Project status & summary

While our team hopes that the weather will warm up to abate the frost, we are also preparing for the last few weeks of the semester to be the busiest. We are beginning to write our report and will start on the poster presentation to our client while we wait for the final stage of our project, the field survey and coring, that will complete our analysis. This week we will be contacting Blue Stakes and conducting the field survey in preparation for collecting our physical sample, likely at the end of the week.

Please enter # of hours spent on project this last week for each team member in the order listed above

Craig Staples: 12 **Alec Escamilla:** 4 **Paul Andersen:** 3