Justin Cupich, P.E.

Associate Principal/Project Engineer

Education
Colorado School of Mines
B.S., Civil Engineering, 2012

Professional Registration
Registered Professional Engineer:
Colorado, Texas

Professional Affiliations
Colorado Association of Geotechnical Engineers (CAGE)

American Society of Civil Engineers (ASCE)

Qualifications Summary

Mr. Cupich has **8 years of experience** in geotechnical engineering and an additional **2 years of experience** in laboratory testing, materials testing, and **7 years** of non-destructive testing of pavement surfaces using a Falling Weight Deflectometer. He has worked on several pavement designs, including the ME-design process, pavement evaluations consisting of pavement condition Index (PCI) studies as well as laboratory forensic studies. Justin is the lead for K+A in conducting and analyzing Falling Weight Deflectormer testing on projects throughout the western United States.

Professional Experience

- **South Alkire Street Improvements** (Littleton, CO): Performed the geotechnical engineering study for improvements to Alkire Street from S. Zang Court to W. Belleview Avenue for Jefferson County Road & Bridge. During the study, expansive soils were encountered and the project was located within the Jefferson County Designated Dipping Bedrock Area (DDBA). Coming across these elements, recommendations were made in accordance with Jefferson County's specifications for pavements with the DDBA and for mitigation of post-construction heave-related movements. The improvements included widening of the east side of the roadway to add two northbound lanes, adding two left turn lanes, and adding a bicycle lane. The project also included the construction of raised medians, curb & gutter, an attached sidewalk on the east side, and drainage improvements with new store sewer pipe, manholes, and inlets. Construction will begin in mid-July 2021 and expected to be complete by the end of 2021.
- **Bayou Gulch Road** (Douglas County, CO): Conducted a geotechnical investigation for the construction of about Bayou Gulch Road and the construction of a 60-inch diameter RCP and the extension of an existing 6'X6' CBC The new overflow structure was constructed with a relatively steep gradient. Roadway pavement recommendations were developed AASHTO 1993 methodology.
- **State Highway Loop 375 Local Street** Improvements (El Paso, TX): Conducted FWD testing along several local streets in El Paso, Texas. The FWD data was reduced and analyzed to provide subgrade resilient modulus, pavement modulus, existing pavement section structural number, and approximate pavement remaining life (ESALs).
- **Community Center Drive Improvements** (Northglenn, CO): Conducted a geotechnical investigation for the improvements to Community Center Drive. The recommendations included a full reconstruction alternative and a mil and overlay alternative. Additionally, foundation recommendations for a new traffic signal were provided.
- **Highway 105 Evaluation** (El Paso County, CO): Conducted FWD testing along approximately 1.0 centerline mile of Highway 105. The FWD data was reduced and analyzed to provide subgrade resilient modulus, pavement modulus, and existing pavement section structural number.
- **Metro State Parking Lot** (Denver, CO): Conducted a geotechnical investigation for the construction of a 0.35 acre parking lot. Recommendations were provided for construction using standard pavements and porous pavers and dry sumps constructed beneath the parking lot to discharge storm water onsite.
- **6th Avenue Extension** (Aurora, CO): Performed the pavement thickness design for the project using CDOT's newly adopted Mechanistic-Empirical design procedure.
- **Porteos Number 2 Development** (Aurora, CO): Conducted a geotechnical investigation for the construction of a several arterial roads subject to heavy truck traffic and busses. Special consideration included highly expansive

subgrade materials with high sulfate content. Recommendations included mechanical stabilization utilizing geogrid and aggregate base course beneath the pavement sections.

- **Greenwood Village Pavement Evaluation and Design** (Greenwood Village, CO): Conducted geotechnical investigation and FWD testing for several residential street within Greenwood Village. The geotechnical exploration and FWD data was reduced and analyzed to provide recommendations for full depth reconstruction and mil and overlay alternatives for the project.
- **West 66th Avenue** (Adams County, CO): Provided evaluation and geotechnical recommendations full depth reconstruction or mil and overlay of West 66th Avenue. Special consideration included landfill materials encountered beneath the pavement structure and traffic consisting of a large amount of heavy truck traffic.
- **Shay Ditch Trail** (Thornton, CO): Conducted a geotechnical investigation for a proposed pedestrian bridge and multi-use trail Special consideration included shallow groundwater due to existing wetlands and the use of subgrade stabilization.
- **Pedestrian Bridge Over Leggett Ditch** (Boulder, CO): Conducted a geotechnical investigation for a proposed bridge replacement. Special consideration included limited site access and consideration of foundation construction due to the limited access.
- **Colorado Spring Airport Runway FWD** (Colorado Springs, CO): Performed falling weight deflectometer (FWD) testing for a Runway of the Colorado Spring Airport. The project also included analyses of the FWD data which was used by other to evaluate potential rehabilitation alternatives.
- **Roxborough Drive Paving Project** (Douglas County, CO): Performed a geotechnical engineering study and pavement thickness design for the proposed extension to Roxborough Drive within Roxborough Park.
- **E-470 Widening – Quincy Ave. to Smith Road** (Denver/Aurora, CO): Performed a geotechnical engineering study and pavement thickness design for the proposed widening of E-470 between Quincy Avenue and Smith Road. The project included recommendations for bridge and abutment supports, extensions to existing CBCs, pavement design including cement treated subgrade recommendations, and global stability of retaining structures.
- **E-470 & 38th Avenue Interchange** (Aurora, CO); Performed a geotechnical engineering study and pavement thickness design for the proposed E-470 and 38th Avenue interchange. The project included recommendations for bridge and abutment supports, extensions to existing CBCs, new CBSs, pavement design, and global stability of retaining structures. Special consideration included recommendations for 40 foot high retaining walls as embankments. Settlement of the embankment and wall backfill was or high concern. Shallow soft and saturated soils were also present at the base of the walls. Recommendations for mitigation of settlement of the fill soils and foundation soils were provided.
- **South Quebec Parking Lot** (Greenwood Village, CO): performed a pavement evaluation for a newly constructed parking lot that had exhibited signs of distress. The evaluation consisted of asphalt coring and subgrade exploration for lab testing of the asphalt and subgrade soils. The laboratory testing was analyzed to provide potential causes of the poorly performing pavement.
- **CDOT Pavement Evaluation** (Region 1 locations, CO): Performed four pavement elevations studies for major roadways within CDOT's Region 1 boundaries. Project included obtaining pavement cores and samples of the base course to assist CDOT in evaluating the future need for pavement rehabilitation of these roadways.