A close-up of a person smiling

Description automatically generatedZACHARY MAHON, PE

**Education**

Bachelors of Science, Civil Engineering,   
 University of Nebraska-Lincoln – 2015

Masters of Science, Civil Engineering,   
 University of Nebraska-Lincoln – 2017

Thesis – Presence of Microplastics in Nebraska

**Professional Licenses**

Professional Engineer – Alaska, Nebraska, and South Dakota

**Specialty Certifications**

40 hr. HAZWOPER – September 2017

SCS Intermediate AutoCAD Civil 3D Training – October 2017

Microdesk AutoCAD Plant 3D Training – March 2019

**Professional Experience**

Mr. Mahon is a Senior Project Professional with 7 years of experience in the solid waste and environmental engineering fields and has assisted a variety of public and private sector clients permit, design, and operate solid waste management facilities in compliance with state and federal regulations. He has also assisted non-solid waste clients navigate stormwater permitting requirements and assisted with environmental due diligence associated with real estate transfers.

Zach has worked with numerous solid waste disposal facilities in the Midwest on projects that have primarily involved cell construction, permitting, and operations support. He has assisted both landfills (MSW and C&D) and transfer stations complete comprehensive updates to their state issued solid waste operating permits and helped clients navigate permit modifications due to construction or operational changes. Zach has also assisted with numerous construction projects from procurement to construction quality assurance observation for both landfill liner and final closure projects in roles ranging from field observation to certifying official.

He has also provided support or managed projects related to operations support inclusive of environmental monitoring, fill planning, site use planning, and general infrastructure improvements. Notable projects Mr. Mahon has been involved in are described below.

Solid Waste Permitting

**City of Lincoln, MSW and C&D Permit Renewal – Lincoln, NE:** Project manager and certifying engineer for the NDEE Title 132 Operating Permit renewal effort for both facilities operated by the City of Lincoln. Project included modifications to the groundwater monitoring network, methane monitoring network, and general update to reflect changes made to both facilities during the previous 5-year permit term.

**City of Alliance, MSW and C&D Permit Renewals – Alliance, NE:** Project manager and certifying engineer for the NDEE Title 132 Operating Permit renewal effort for the City’s MSW landfill. The permit renewal contained a major modification to transition operations from bale fill to loose fill of MSW wastes which required review and update of design calculations. Mr. Mahon also assisted with the development of updated permit drawings and redesigned final cover as part of the facilities C&D permit renewal and major modification. Revisions to the final cover design were undertaken to incorporate overfilled waste and expand facility capacity. Mr. Mahon also assisted with updating the permit documentation and reviewed documents prior to submission to the NDEE.

**City of Gering, MSW Permit Renewal – Gering, NE:** Served as the project manager for the solid waste permit renewal of the MSW landfill operated by the City of Gering. Mr. Mahon assisted with updating permit documentation to reflect site conditions and new operating procedures. He also provided the City with operations support and initial closure planning as the site begins nearing final capacity.

**City of Lincoln, Bluff Road Landfill Alternative Final Cover Demonstration – Lincoln, NE:** Served as project manager for the research, modeling, design, and monitoring of an alternative final cover demonstration project for the Bluff Road Landfill. Mr. Mahon assisted with the performance modeling of various final cover profiles using VADOSE/W and the selection of which profiles to be used in the demonstration plot. During the construction phase of the project, Mr. Mahon performed construction quality assurance observations and served as the client’s onsite representative. Now in the monitoring period, Mr. Mahon has been responsible for planning and organizing monitoring activities and preparing the annual summary report for submission to the NDEE.

Landfill Engineering

**Municipality of Anchorage, Cell 9 Seep Mitigation Support – Anchorage, AK:** Design engineer for the development of construction drawings, technical specifications, and bid package to mitigate a leachate seep believed to be caused by damage to the bottom liner system. Project included design of an excavation to allow the removal of approximately 250,000 cubic yards of previously deposited solid waste to allow the inspection of approximately 2 acres of bottom liner. Mr. Mahon was the design team lead and was responsible for the preparation of the project manual for use by the Municipality’s procurement office to secure the services of a construction contractor.

**City of Lincoln, Recyclables Collection Site Construction – Lincoln, NE:** Mr. Mahon served as the design engineer for the development of multiple recyclables collection sites for the City of Lincoln. The project involved the development of construction drawings and contract documents for three sites selected by the City as part of a larger project to increase the efficiency of the City managed recycling sites. Design elements included site and pavement design, coordination with subcontracted electrical engineers, and stormwater permitting. Mr. Mahon also assisted with construction phase support and provide contractor coordination and oversight during the construction.

**Confidential Client, New Landfill Siting – USA:** Assisted with the conceptual design of a greenfield landfill in the central USA. Mr. Mahon was a member of the design team and was responsible for designing landfill specific elements of the project and providing input to other members of the developer’s design team. He also helped develop fact sheets and other public facing documents to assist the developer with securing public support for the project.

**City of Alliance, Scale and Baler Replacement – Alliance, NE:** Served as project manager for the development of bid specifications to replace both the truck scale and solid waste baler for the City of Alliance’s solid waste operations. Mr. Mahon developed the specifications to meet the clients request and managed the bidding and contracting process for the City as they did not have dedicated staff to handle those activities.

**Waste Connections, J Bar J Landfill Cell Construction – Ogallala, NE:** Project manager and sealing engineer for the development of construction drawings and bid documents for cell construction. Project included design of cell grades and stormwater control features in compliance with the facility’s permit. Mr. Mahon also assisted with the construction oversite and project management during the construction of the prior cell at the J Bar J Landfill.

**City of Lincoln, North 48th Street Infrastructure Improvements – Lincoln, NE:** Mr. Mahon served as the project manager for facility improvements at the North 48th Solid Waste Management Facility. Improvements included repairing failed sections of asphalt and concrete pavement, replacing a section of gravel road with concrete pavement, and improving stormwater drainage. Mr. Mahon assisted with developing construction drawings and technical specifications as well as reviewing bids and assisting the City during construction.

**Confidential Client, Creek Realignment – USA:** Designed a stream alignment and profile to re-route an existing stream away from landfill operations to allow for facility expansion. The stream re-route required a permit from the Army Corp of Engineers and Mr. Mahon was responsible for analyzing the hydraulic aspects of the stream. HEC-RAS modeling was performed to evaluate stream flow conditions based on designed stream characteristics. The stream alignment and profile was developed to mimic natural conditions and included design elements such as overflow pools to hydraulically connect adjacent wetlands and check dams to create ponding within the stream. In addition to performing the hydraulic analysis, Mr. Mahon was also responsible for developing supporting documentation and plans showing the proposed stream re-route.

**Omaha Public Power District (OPPD), Nebraska City Station Phase 3 Closure – Omaha, NE:** Assisted with the design of a closure project for a Coal Combustion Residue (CCR) landfill as a staff engineer. Mr. Mahon developed the final cover contours for an approximate 26-acre closure project and developed the construction documents using AutoCAD Civil 3D. He also assisted with developing technical specifications and reviewing contract documents prior to releasing the design for bidding.

**Waste Connections, Butler County Landfill Cell Construction – Butler County, NE:** Served as a staff engineer for the construction quality assurance (CQA) effort during the construction of several cells at Butler County Landfill. Mr. Mahon reviewed project submittals to evaluate compliance with the construction documents and assisted with the development of CQA reports that were sent to the Nebraska Department of Environmental Quality.

**Waste Connections, Cherokee Village Landfill 10-Year Phasing Plan – Cherokee Village, AR:** Developed a phasing plan for future cell development based on projected waste receipts to aid in capital planning. Mr. Mahon used AutoCAD Civil3D to develop intermediate waste surfaces based on permitted and existing conditions. These were then used to develop site life models to provide landfill management with a plan for future site development.

**City of Alliance, Stormwater Improvements and Borrow Site Access – Alliance, NE:** Developed construction and permit drawings for stormwater improvements and a low water stream crossing at the City of Alliance’s Municipal Solid Waste Landfill. Mr. Mahon also revised stormwater calculations for inclusion in a permit modification as a result of proposed construction activities and developed project specifications and front end documents based on EJCDC documents for use in contract administration.

**Bondad Landfill, Slope Stability Report – Bondad, CO:** Assisted with the slope stability analysis for the Bondad Landfill expansion project. Mr. Mahon used Slope/W by GEOSLOPE International to model the stability of the landfill and final cover system along the critical cross sections of the landfill. He also assisted with the report documenting the findings of the study for inclusion in the facilities permit documentation.

**Omaha Public Power District (OPPD), North Omaha Station Phase 1 and 2 Side Slope Closure – Omaha, NE:** Assisted with the design and permitting of a closure project for a Coal Combustion Residue (CCR) landfill as a staff engineer. Mr. Mahon developed the final cover contours and drainage plan for an approximate 5-acre closure project and developed the construction documents using AutoCAD Civil 3D. He also assisted with the permit modification and stormwater control plan that were developed in conjunction with the closure project. During the construction phase, Mr. Mahon also served as a CQA technician and was tasked with construction observation and material sampling/testing to determine conformance with project specifications.

Environmental Monitoring and Compliance

**City of Lincoln, North 48th Street and Bluff Road Landfill Environmental Monitoring – Lincoln, NE:** Mr. Mahon serves as the project manager for environmental monitoring activities for the C&D (North 48th Street) and MSW (Bluff Road) landfills owned and operated by the City of Lincoln. Monitoring activities include groundwater sampling and reporting, stormwater sampling, leachate sampling, landfill gas management, and surface emissions monitoring. He assists with the preparation and review of quarterly and semi-annual reports for submission to regulatory agencies.

**City of Gering, MSW Landfill Environmental Monitoring – Gering, NE:** Mr. Mahon manages the environmental monitoring needs of the City of Gering’s municipal solid waste (MSW) landfill in compliance with the site’s Title 132 Operating Permit. Monitoring activities include semi-annual groundwater monitoring and quarterly landfill gas monitoring. He manages the field work and is responsible for the preparation and review of summary reports for submission to regulatory agencies.

**Groundwater Sampling – Various Sites:** Assist with routine groundwater sampling for regulatory compliance at various landfills in Nebraska and South Dakota. Field activities include purging of groundwater wells, collection of samples, and associated record keeping of sampling activities and site conditions.

**Daily’s Premium Meats, Process Wastewater Pre-treatment Improvements – Salt Lake City, UT:** Assisted with the design and construction of improvements to the process wastewater pre-treatment system at a bacon manufacturing facility. Process improvements included adding a fine screen, an equalization tank, and a storage tank for fats, oils, and greases removed during treatment. These improvements required expansion of the treatment plant building and constructing a containment structure for the two new tanks stored outside. Mr. Mahon assisted with the civil aspects of the project such as building layout, pipe routing, site improvements. He also developed the plans showing project work for submission to regulatory agencies and sub-contractors.

**Costa Farms, Inc., SPCC Plans – Miami, FL:** Mr. Mahon performed facility inspections and data gathering operations in support of developing SPCC plans for numerous properties managed by Costa Farms as plant nurseries. Using ESRI Collector, a smartphone app, data was electronically collected on SPCC regulated units in the field and geolocated. This allowed for easy data management given the large geographic distribution of the properties across all of Miami-Dade County. In addition to assisting with data gathering, Mr. Mahon also assisted with synthesizing the data, making recommendations to Costa Farms on how to effectively manage SPCC regulated units, and assisted with SPCC plan development.

**City of Omaha, Industrial Stormwater Inspections – Omaha, NE:** Project manager responsible for the performance of stormwater inspections at industrial facilities within the City of Omaha. Work involves scheduling, performing, and documenting stormwater compliance inspections related to the State of Nebraska’s Industrial Stormwater General Permit within the City of Omaha’s Municipal Separate Stormwater Sewer System and provide environmental compliance outreach on behalf of the City of Omaha.

Publications

Mahon, Z. (2017). *Presence of Microplastics in Nebraska*, University of Nebraska – Lincoln.