



**Missouri's
Local
Program**
*for community
development*

COVER SHEET

(This must accompany your firm's letter of interest and does not count in the page limit)

Firm's Full Legal
Name:

Master Consulting Engineers, Inc.

Firm Contact Name:

Brad Loomis, PE, PTOE

Contact Email
Address:

brad.loomis@mcengineers.com

Firm's Mailing Address:

4401 Meramec Bottom Road, Suite A

St. Louis, Missouri 63129

Work Category:

- Roadway Design
- Trails & Sidewalks
- Construction Inspection
- Traffic Engineering & TEAP
- Structures
- Environmental
- Historic Preservation
- Multimodal Planning / Systems and Facilities Design
- Transportation Planning – **NEW CATEGORY**

December 12, 2025

Ms. Ashley Buechter, P.E.
Local Program Administrator

RE: MoDOT LPA On-Call Professional Services – Roadway Design

Dear Ms. Buechter:

Master Consulting Engineers, Inc. (MCE) is pleased to present this proposal for Local Public Agency (LPA) Professional Services for the 2026-2029 cycle. For over 25 years, MCE has delivered engineering solutions that help agencies operate safer, more reliable, and more efficient transportation systems. We combine technical expertise, real-world experience, rigorous analytical tools, and a dedicated team of licensed professional engineers to support cities, counties, Departments of Transportation, and federal entities across the country.

General Experience of the Firm

MCE and our staff have extensive experience performing the full range of roadway, safety, and operations engineering services, including:

- **Highway and Roadway Design**
 - Rural two-lane widening
 - Urban arterial reconstruction
 - Intersection and corridor geometric design
 - Complete Streets and multimodal roadway conversions
 - Pavement rehabilitation, resurfacing, and mill-and-overlay plans
 - ADA sidewalk upgrades, curb ramps, crosswalks, and pedestrian networks
- **Drainage, Utilities, and Hydraulics**
 - Stormwater retention/detention systems
 - Closed/open drainage design
 - Culverts, channels, swales, underdrains, and erosion control
 - Utility coordination and relocation planning
 - Hydrologic/hydraulic modeling (HEC-RAS, HY-8, ICPR, SWMM)
- **Multimodal & Complete Streets Facilities**
 - Shared-use paths
 - Protected bike lanes
 - Sidewalk expansion
 - Transit stop integration
 - Lighting design and pedestrian safety enhancements

With 25 years of continuous roadway design experience, MCE provides full-cycle design support from concept through PS&E development.

Past Performance

MCE staff have successfully designed roadway, multimodal, and drainage projects for:

- Municipal clients: Cities of St. Louis, Clayton, Brentwood, O'Fallon, Orlando, Tampa, and Fort Lauderdale.
- County agencies: St. Louis County, Jefferson County, Pinellas County, Orange County, and Hillsborough County.
- State DOTs: MoDOT, IDOT, FDOT, GDOT (delivering roadway design packages, resurfacing plans, alternatives analysis, and multimodal transportation safety upgrades).

Some example local agency roadway design projects include:

- *Normandy Drive Roadway Improvements – City of Bel-Nor, MO. (Federally Funded)* At a prior firm, Brad Loomis supervised the development of roadway improvements of 1.01 miles of Normandy Dr. from Natural Bridge Rd. to St. Charles Rock Rd. Improvements included surface overlay, curb replacement, and sidewalk replacement. The project also involved ADA compliance upgrades such as updated signing and curb ramps with truncated domes. Project scope included permitting and construction management.
- *Pavement Inventory and Pavement Management Plan – City of Bel-Nor, MO. (Locally Funded)* At a prior firm, Brad Loomis provided oversight of development of city-wide pavement inventory and recommended pavement maintenance plan to coincide with available City funding.
- *Old Gravois Road Roadway Reconstruction and Pedestrian Improvements – City of Fenton, MO. (Federally Funded)* At a prior firm, Brad Loomis supervised the development of plans and specifications for the reconstruction of 0.36 miles of Old Gravois Rd. The project included roadway, sidewalk, storm sewer, and stormwater quality design as well as traffic signals and pedestrian ADA improvements.
- *TIF 1 & TIF 3A Street Resurfacing – City of East St. Louis Public Works, IL. (Locally Funded)* At a prior firm, Brad Loomis oversaw the design of milling and asphalt overlays of 20 streets in the City of East St. Louis, Illinois. This project included preparing contract plans and job special provisions as well as topographic survey, design of ADA compliant curb ramps for sidewalks at intersections along the pavement replacement routes, and coordination with utilities.
- *Oakland Avenue Streetscape – St. Louis Board of Public Service, St. Louis, MO. (Federally Funded)* At a prior firm, Brad Loomis designed 1.1 miles of new 4-lane arterial roadway and new landscaped median. Included widening and overlay of existing roadway, installation of lighting and signing, and striping.
- *Temporary and Permanent Traffic Signal Design – CR 2986 – San Patricio County, Corpus Christi, TX. (Locally Funded)* At a prior firm, Brad Loomis supervised development of design for and permanent traffic signals to satisfy the construction traffic for a new facility in Corpus Christi, Texas. The team provided traffic modeling and signal timing plans for three intersections along FM 2986. Design plans included all the field wiring, cabinet requirements, and controller programming to accommodate the new signal phases.
- *Traffic Analysis for O Road Corridor Improvements – Mesa County, CO. (Locally Funded)* At a prior firm, Brad Loomis led team that conducted in-depth analysis to compare no-build traffic operations to a “build” scenario that includes a new segment of O Road from 13 Road to 14 Road and a second new segment of O Road from 17 Road to 18 Road. The analysis included evaluation of auxiliary lanes based on Colorado Department of Transportation standards as well as cost-benefit analysis and traffic operations measures of effectiveness. Synchro was used as the microsimulation software for analysis.
- *US 160 Pedestrian Crossing – City of Pagosa Springs, CO. (Locally Funded)* At a prior firm, Brad Loomis led team that conducted in-depth analysis to evaluate the merit of relocating a pedestrian crossing location as part of a roadway reconstruction project of US 160 (Pagosa Street/Main Street/San Juan Street). The study included the evaluation of relocating an existing pedestrian crossing. The criteria outlined in the CDOT Roadway Design Guide, Chapter 14 – Bicycle and Pedestrian Facilities was used in the study, specifically Section 14.3 Pedestrian Facilities. The study resulted in two viable locations that improved sight distance for the traveling vehicles in the area, which increases safety for the pedestrians

Qualifications of Personnel

MCE’s roadway design team includes:

- Licensed Professional Engineers (PE) with decades of roadway design experience
- Designers proficient in MicroStation, GEOPAK, OpenRoads Designer (ORD), AutoCAD Civil 3D, and ArcGIS
- Specialists trained in HEC-RAS, HY-8, SWMM, ICPR, and pavement design methodologies
- Engineers experienced in multimodal design, ADA compliance, drainage systems, and complete streets
- Staff with federal project experience and knowledge of FHWA design principles and documentation requirements

Project Manager/Lead Roadway Engineer: Brad Loomis, PE, PTOE – Mr. Loomis has more than 23 years of experience in managing and designing various public works and private development projects. His experience and technical interests lie in the following areas: traffic engineering and operational analysis, roadway and highway; railroad design; federal and military facilities, and permitting.

Lead Roadway Designer: Scott Roeseler – Mr. Roeseler has over 25 years of experience in the drafting and design of a wide range of public and private infrastructure projects. His experience includes traditional and LIDAR field surveys, roadway and highway improvements including intersection design studies and barrier warrant analyses, parks and trails development, and a wide range of public and private site development projects.

Familiarity/Capability

MCE is thoroughly familiar with the requirements associated with federally funded transportation projects, particularly those administered through MoDOT's Local Public Agency (LPA) program. We understand the documentation, procedural checkpoints, and approval timelines that govern federally funded pedestrian projects.

Our team is proficient in preparing:

- Section 106 coordination
- Preliminary & final plans meeting MoDOT's Plan Development Guidelines
- Right-of-way plans and federal acquisition compliance
- Utility conflict documentation and agreements
- Estimate preparation consistent with federal requirements
- Bid-ready packages supporting LPA oversight

Because the federal process demands accuracy, documentation, and procedural discipline, our team maintains rigorous internal QA/QC workflows that ensure each milestone aligns with MoDOT and FHWA expectations. This familiarity reduces the likelihood of rework, accelerates approval timelines, and increases the predictability of project delivery.

Accessibility

We maintain efficient communication and fast turnaround through:

- Real-Time Communication Tools: Teams, Zoom, and Webex for virtual meetings; shared dashboards for status updates; immediate access to project managers.
- Cloud-Based Project Delivery: Shared OneDrive/SharePoint workspaces ensure clients have direct access to schedules, drafts, models, and deliverables.
- Dedicated Project Managers: Each project includes a named PM responsible for communication, coordination, and quick response to inquiries.
- Proximity and Regional Presence: Headquartered here in Missouri, MCE routinely delivers services across multiple states and maintains rapid responsiveness via digital tools, scheduled coordination calls, and field visits as needed.

MCE has earned a reputation for on-time deliverables, availability, and clear communication, and we appreciate the opportunity to provide our engineering services to the Local Public Agencies here in Missouri.

Very truly yours,

Master Consulting Engineers, Inc



Brad Loomis, PE, PTOE
Senior Principal



STATEMENT OF QUALIFICATIONS

4401 Meramec Bottom Road, Suite A
St. Louis, MO 63129

(314) 881-9398
marketing@mcengineers.com



FIRM OVERVIEW

Master Consulting Engineers, Inc. (MCE) has been providing engineering services **since 1999**, with offices in St. Louis, Tampa, Orlando, Fort Lauderdale and Fort Walton Beach. MCE is a licensed firm with **over 30 employees**, including **8 licensed professional engineers** who bring **over 200 years of combined experience**. MCE is also licensed to perform engineering services in **22 states** across the United States of America.

CORE VALUES

EFFICIENCY

Our approach focuses on smart, practical solutions that keep traffic and commerce moving. By optimizing traffic operations, improving signal coordination, and applying proven design strategies, we reduce congestion and enhance safety. Every project is delivered on time, within budget, and in full compliance with MoDOT standards.

SAFETY

All of the projects that we take on are completed with the prioritization of public safety. By utilizing cutting-edge technology and our strategic analysis, we effectively minimize potential risks and efficiently improve roadway conditions.

INNOVATION

By leveraging advanced modeling and simulation tools, we deliver innovative engineering solutions tailored to the unique challenges of each project, ensuring forward-thinking, sustainable, and cutting-edge outcomes.

OUR VISION

"The vision of MCE is to encourage the advancement of engineering by using innovative design methods in an environment of ingenuity, leadership and excitement; which result in designing dynamic high performance structures that enhance the human experience."



MASTER CONSULTING ENGINEERS CIVIL ENGINEERING CAPABILITIES



Master Consulting Engineers, Inc. (MCE) brings continued excellence to each project. Our experience spans both urban and suburban environments, addressing diverse planning and engineering requirements. Overall, we prioritize timely solutions with our practical approaches for every project at hand.



TRAFFIC ENGINEERING AND PLANNING

- Roundabout Analysis
- Traffic Signal and Pedestrian Signal Design
- Signal Timing and Phasing
- Intersection Capacity Analysis
- Data Collection
- Traffic Studies
- Traffic Impact Analysis
- Traffic Safety Studies and Assessments
- Crash Analysis



HIGHWAY AND ROADWAY DESIGN

- Geometric Design
- Location Design Studies
- Mill and Overlay and Resurfacing Design
- Utility Coordination and Relocation Design
- Sidewalk, Bicycle, and ADA Improvements
- Overland Sheet Flow and Stormwater System Design



CIVIL SITE AND UTILITY DESIGN

- Site Feasibility and Layout for New Structures
- Rehabilitations and additions Site Grading Stormwater Quality
- Permeable Pavement
- Earthwork Analysis Parking, Sidewalks, and Trails
- Erosion Control and Drainage Designs
- Utility Coordination

PROJECT APPROACH



At MCE, we know the importance of providing quality work that is expected but instead we focus on exceeding that, starting with the delivery of a comprehensive management system and procedure.

Our approach is categorized into the following general phases:



Kick- Off Meeting

MCE will begin with a collaborative meeting involving all of the representatives and team members to understand the context and influences on the project and to communicate these for review and discussion.

Prior to commencement of work our team will perform a brief site analysis to address any possible program/permitting issues. This task could entail site visits, review of existing utility and property data and/ or aerial photo analysis.



Setting Goals and Timelines

Management-level planning maps out an overall management plan from which resources, acquisitions and sub-contracts can be identified, costed and put in place.

Quality requirements and approaches will be defined and agreed during the project start-up. Contingency plans and avoiding action will be defined as appropriate. MCE will have an effective team nurtured through appropriate initiation, training, and communications.



Budget for Surprises

MCE creates a detailed and accurate forecast of the total anticipated costs. The cost control begins with defining the clients program requirements, analyzing the project budget, and aligning both.

MCE takes every aspect of a project into consideration and consults with others who will be involved, and calculates the figures down to the last penny to create a timely budget.



Design Reviews "QA/QC"

Review of our Design Documentation is conducted at each 50, 75, 95, and 100% status point by the Principal in Charge. This involves comparing the existing documentation with the requirements and expectations articulated in our Project Performance Checklist.

All of MCE's submittals will undergo a rigorous QC review by an independent principal before leaving the building. Quality Control is a daily process, where engineering analyses, designs and plans are checked as the work progresses.