



**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:

TERRA Engineering, Ltd.

Firm Contact Name:

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St. Louis, MO 63119

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**



Response to Request for Letter of Interest

TERRA Engineering, Inc. (TERRA) is submitting our Letter of Interest to MoDOT for the Missouri Local Program on-call services for Traffic Engineering and TEAP. The TERRA team has helped numerous local agencies including counties, cities and other entities with their traffic engineering needs. TERRA Engineering has completed all of the types of work requested in this category including traffic signal design, signing plans, lighting design, pavement marking design, speed limit studies, sign inventories, parking studies and traffic studies and modeling.

Our company traffic engineering services are managed from our office in the St. Louis Metropolitan area, however our team has been working with other firms on traffic related projects throughout the state including in the Columbia, Kansas City and Springfield areas. TERRA has an experienced staff and the availability to complete the project on time and on budget and can be available to mobilize quickly to meet each community's needs. It is our goal to provide economical and efficient traffic services that provide a thorough evaluation and design for each of our clients. TERRA has worked on federal funded projects including TIGER grant projects and MoDOT LPA projects and is familiar with the requirements and laws which govern the implementation of these projects.

General Experience of Firm

TERRA's traffic engineering experience includes working as the prime consultant on numerous traffic study projects throughout the Midwest and internationally. TERRA's traffic team employs 3 full-time crews collecting traffic count data throughout the state of Illinois at over 10,000 locations in each two-year period and has been performing on this project for almost 20 years. In addition to these crews, TERRA employs an additional crew based out of the St. Louis office which specializes in Miovision video counts which has completed over 7,000 video traffic counts on over 700 different projects in Missouri and Illinois in the last fourteen years. In addition to this local work, our team was selected as the prime consultant for a three-year project in Saudi Arabia to collect traffic data and design real time collection systems using Sensys and Econolite. Our firm is one of the most experienced in the country at obtaining accurate and quality data which is the foundation of almost every traffic project.

TERRA's traffic modeling experience includes utilizing Synchro, VISSIM, Tru-traffic and HCS for traffic analysis and creating micro-simulation models which can be used for evaluating new traffic signals to retiming of existing signals. Our team also uses these programs when completing traffic engineering studies to determine impacts of changes to the roadway network including the addition or reduction of driving lanes as well as bicycle lanes and pedestrian activity centers. These programs help in determining the operational effectiveness in both existing and future proposed conditions for comparison when helping communities make decisions on how to modify their roadway system.

In addition to data collection TERRA has worked on large scale traffic impact studies including the formerly proposed Lucas Museum in Chicago. TERRA's team has also provided traffic studies and traffic safety analysis for Missouri communities such as Weldon Spring, Manchester, Wildwood and Cottleville. In addition to these projects, TERRA's St. Louis area based traffic team has performed smaller scale traffic impact studies for schools, housing developments, and commercial sites in Missouri, Illinois, Wisconsin and Indiana.

TERRA utilizes the methods in the Highway Safety Manual (HSM) when evaluating roadway safety analysis. The HSM process provides quantitative information to allow for decision making when evaluating locations from a safety standpoint. By utilizing this process TERRA will be using a scientific based technical approach which removes the guesswork from safety analysis. This method is used to diagnose issues, evaluate countermeasures and compare economic benefits of alternatives.

TERRA's team has performed numerous traffic studies which have evaluated parking inventory and turnover, pedestrian, bicycle and transit Levels of Service per the Highway Capacity Manual (HCM). TERRA is a leader in using video data collection technology to count users by mode, and also to evaluate system user behavior as a way to recreate real world field conditions in our traffic models and analysis.

TERRA's traffic staff has also designed numerous traffic signals in Missouri and Illinois. These signal designs have included both stand-alone signals and interconnected networks using both fiber and wireless technologies for permanent and temporary signals. Our team has incorporated Flashing Yellow Arrow (FYA) treatments and evaluated MoDOT policies for variable left turn phasing and yellow and all red clearance intervals as part of our signal timing and coordination work.

TERRA's experience on all types of traffic related projects including data collection, safety studies, traffic analysis, signal and lighting design as well as incorporation of MUTCD standards provide a well-rounded team which can provide an array of services to meet the traffic engineering needs of each local agency.

Past Performance

TERRA understands that the best way for you to evaluate our team and our record of past performance on projects is to contact our references and discuss how they feel about our services. We have provided some examples of TERRA's recent traffic related project experience include the following:



MoDOT Traffic Counts + Signal Optimization of MO Route 21 | TERRA Engineering was selected as part of a team to provide traffic data collection services and traffic modeling for the signal coordination and timing project to be completed along Missouri Route 21. TERRA's staff performed the video data collection at all of the intersections through the corridor. Chris Hutchinson from TERRA's staff then created and updated a Synchro model to evaluate the existing signal timing and to optimize proposed timing plans. TERRA's team evaluated multiple timing scenarios which included AM, PM, Weekend and off-peak timings and worked to improve the overall network performance. TERRA also assisted with the before and after travel time runs utilizing Tru-Traffic software which were used to help measure the actual improvements realized by drivers. TERRA used the Tru-traffic data in conjunction with the Synchro model to fine-tune the signal green bands in conjunction with the travel time and speed data and improve the traffic model performance. **Key Personnel:** M. Chris Hutchinson, PE, PTOE | **Reference:** Brad Loomis, PE, PTOE, Tepas, LLC, 816.506.9284, Brad.loomis@tepa.com / Chris Hohowski, MoDOT, 314.275.1577, christopher.hohowski@modot.mo.gov

On-Call Traffic Services – Weldon Spring, MO | TERRA Engineering is completing a three year on-call services project for the City of Weldon Spring, MO to provide traffic engineering services throughout the City. Work included traffic data collection at several locations throughout the City and a safety study along “Back” Wolfrum Road. The City was experiencing numerous crashes with vehicles leaving the roadway along this narrow road with steep grades. TERRA evaluated crash history, roadway signage, roadway geometry and several other factors to look for potential solutions to improve safety and authored a report which was presented to City staff and the City Board for discussion. This report and information was then provided by the City to St. Charles County to help procure funding for safety improvements. **Key Personnel:** M. Chris Hutchinson, PE, PTOE | **Reference:** Bill Schnell, PE, City Engineer, City of Weldon Spring, MO, 636.441.2110 ext. 110, cityengineer@weldonspring.org

Traffic Data Collection and Study – IDOT Districts 3,4,5,6,7,8, and 9 | TERRA Engineering, Ltd. (TERRA), provided 24-hour machine traffic counts for on- and off-system routes throughout multiple IDOT Districts, which includes municipalities such as Peoria, Quincy, Carbondale, Effingham, and Springfield and the Illinois portion of the St. Louis Metro Area. Counts were administered using our inventory of over 500 portable traffic data collection devices such as NuMetrics Hi-Star magnetic traffic lane sensors, road tube counters and MioVision Automated Traffic Data collection cameras. Data was compiled into weekly submittal spreadsheets including volume and classification, where applicable. Raw count data from the magnetic counters was submitted to IDOT weekly. Count data was verified

against historic trends before submitting to IDOT. Field technicians also used on-board laptop computers to collect and compile GPS data, which was then integrated into ArcGIS and sent to IDOT in the weekly submittals. **Key Personnel:** M. Chris Hutchinson, PE, PTOE; Colin Coad, PE, PTOE; Sanders Ong, EI; | **Reference:** William Morgan, IDOT, 217.782.0378, William.Morgan@illinois.gov

Wren Avenue Traffic Study, City of Manchester, MO | TERRA developed a traffic study for the City of Manchester, Missouri to provide additional analysis for a previously prepared report by the Parkway School District. TERRA's task was to evaluate the traffic in the neighborhood adjacent to an existing middle school and elementary school site along Wren Avenue and to analyze the effect of a proposed early childhood center to be constructed between the existing schools which are located on a dead-end street. This study collected traffic data over three separate days including two typical days and a day with rain and thunderstorms to see how traffic varied based on weather. Speed data was also collected at several key points in the neighborhood and around the school during these same time frames. Our experts were on site over three days to observe traffic and pedestrian patterns and identify operational challenges. This data was then compiled into a report with recommendations on proposed changes to facilitate bicycles, pedestrians and vehicles around the schools and neighborhood to improve safety. **Key Personnel:** M. Chris Hutchinson, PE, PTOE; Sanders Ong, EI | **Reference:** Errol Tate, City of Manchester, MO, 636.227.1385, etate@manchestermo.gov

Qualifications of Personnel

Project Manager | M. Chris Hutchinson, PE, PTOE – Mr. Hutchinson has acquired more than 25 years of experience in providing civil and traffic engineering services for a variety of projects and clients. Chris is an expert on data collection processes for temporary traffic counts and long-term count stations. His experience includes traffic modeling and analysis, traffic signal design, lighting design, safety studies, signal optimization, conformance to MUTCD standards, traffic studies, geometric design, safety analysis and development of design plans. Chris and his team have completed a similar on call traffic services project for the Cities of Weldon Spring, MO; Cottleville, MO; Champaign, Illinois, and Peoria, IL and numerous other traffic impact studies throughout the Midwest. Chris has worked on projects throughout Missouri and Illinois and has completed numerous traffic models using VISSIM, Synchro, Tru-Traffic and HCS+ for projects from small new developments to large corridor and neighborhood wide traffic models. Chris will lead any on-call projects from our office in St. Louis.

Project Manager | Colin Coad, PE, PTOE, VMA – Colin has over 15 years of experience in roadway geometrics, traffic analysis, traffic signal design, environmental processes/documentation and preparing



Project Development Reports on State, County and Municipal transportation projects with both local and federal funding. He has mastered various software programs including Highway Capacity Software, Synchro/SimTraffic, MicroStation and GeoPAK. Colin has completed TERRA's neighborhood traffic Study for the Village of Downers Grove, signal designs for the MPEA Event Center, and assisted on the Traffic Monitoring and Analysis project in Riyadh, Saudi Arabia. Colin has also assisted Cook County, IL with an on-call project, performing tasks including conducting speed studies, analysis of intersection operations, traffic signal and stop sign warrants.

Traffic Engineer II | Sanders Ong, EI – Sanders has been working with the St. Louis office for seven years. During this time, Sanders has led the Miovision data collection team efforts from the St. Louis office and has personally overseen several hundred traffic count locations. Sanders also performs QA/QC on TERRA's work on the IDOT Traffic Data collection project ensuring the accuracy of the count data, GPS location and other pertinent information. In addition, Sanders assists with traffic modeling in Synchro and HCS and the preparation of numerous traffic impact studies for various public and private clients.

Traffic Engineer I | Wendy Bonick, EI – Wendy joined the St. Louis office in March 2025 to assist the traffic engineering team. During this time, Wendy has been involved in traffic data collection on numerous projects throughout Missouri and Illinois. When not in the field, Wendy has been assisting on the Illinois Tollway's MUTCD Sign Audit and Lane Closure Guide as well as assisting on traffic impact study analysis and preparation.

Familiarity and Capability

TERRA has significant experience in providing services utilizing federal funding in accordance with laws. Our project Manager, Chris Hutchinson has completed MoDOT's LPA training and was the project manager for our recent LPA project for the City of Old Monroe, MO in the NE District. TERRA's team has worked on federally funded projects as the lead designer for the Illinois Department of Transportation, City of Peoria, IL, and numerous other municipalities. Our staff will ensure that the requirements and paperwork for any federal funding will be prepared and submitted as required.

Accessibility

TERRA Engineering has worked throughout the Midwest on traffic projects and will make our team accessible easily accessible to work with any LPA throughout the state. Our traffic team is based out of our office in St. Louis and can travel as required to meet with any agency as required.

Workforce Diversity

TERRA Engineering is a woman (WBE) owned company which believes in promoting workforce diversity. Our engineering and support staff employs many minorities and women. A diversified staff will be assigned to work on any on-call traffic engineering projects based on the skills and knowledge needed for each task.

TERRA is proud to submit this LOI and looks forward to partnering with local agencies throughout the State of Missouri on providing quality and economical traffic engineering services.

Sincerely,
 TERRA Engineering, Ltd

Michael C. Hutchinson

M. Chris Hutchinson, PE, PTOE, Project Manager

TERRA Engineering, Ltd. (TERRA), has experience with traffic engineering projects and studies of all sizes, ranging from small local projects to larger projects of regional importance. Highlights include work for federal, state, county, and local governments in both rural and complex urban environments. TERRA provides professional traffic survey and data collection to public and private clients. With an inventory of more than 50 Miovision video collection units, over 250 Hi-Star magnetic Counters and more than 200 road tube counters, in addition to numerous handheld counting devices and GPS equipment, our team of qualified technicians is prepared to collect traffic count data on projects of all sizes.

TERRA conducts a wide array of traffic engineering and safety studies to assist our clients in determining the potential impact of a project on the surrounding roadway network. Our traffic engineering staff is well versed in the procedures, standards and technology required to determine the appropriate solutions for each project. TERRA provides a wide array of traffic signal services from traffic signal warrant studies to signal coordination and timing for existing signal corridors. Our traffic engineers have experience designing a wide array of traffic signals including emergency preemption, railroad coordination and Flashing Yellow Arrow (FYA) treatments.



Point of Contact

Chris Hutchinson, PE, PTOE
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Experience

- National Geospatial Agency - St. Louis, MO
- Great Rivers Greenway Bicycle Master Plan - St. Louis, MO
- MoDOT Route 21 Signal Timing Coordination - St. Louis, MO
- Riyadh Traffic Monitoring & Analysis - Riyadh, Saudi Arabia
- Various Traffic Counts - Wildwood, MO
- MoDOT Traffic Counts & Signal Optimization of Route 141- St. Louis, MO
- On-Call Traffic Services - Champaign, IL
- Modified High-Intensity Activated Crosswalk ("HAWK") Signal Installation - Oak Park, IL
- Freedom Parkway - Washington, IL
- Main & University Intersection Improvements - Peoria, IL
- 2017 World Rowing Championship Traffic Management Study - Sarasota & Bradenton, FL
- Area 6 Neighborhood Traffic Study - Downers Grove, IL
- Chicago Park District Headquarters - Chicago, IL
- MPEA Event Center & Hotel Traffic Signals - Chicago, IL
- Downtown Traffic & Parking Study - Clarendon Hills, IL

Services

- Traffic Data Collection
- Corridor Studies
- Speed Studies
- Intersection / Roadway Capacity Analysis
- Intersection Design Studies (IDS)
- Parking Lot Analysis / Studies (including
- Site Circulation)
- Speed Delay Studies
- Traffic Modeling (utilizing VISSIM, Synchro,
- HCS, Sidra, TruTraffic, etc.)
- Traffic Impact Analysis
- Traffic Signal and Stop Sign Warrant Analysis
- Traffic Signal Design / Interconnect
- Transit Studies
- Vehicle / Pedestrian Inventories
- Highway Safety Manual
- Safety Studies and Economic Analysis

Meet Your Key Team



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Relevant Projects

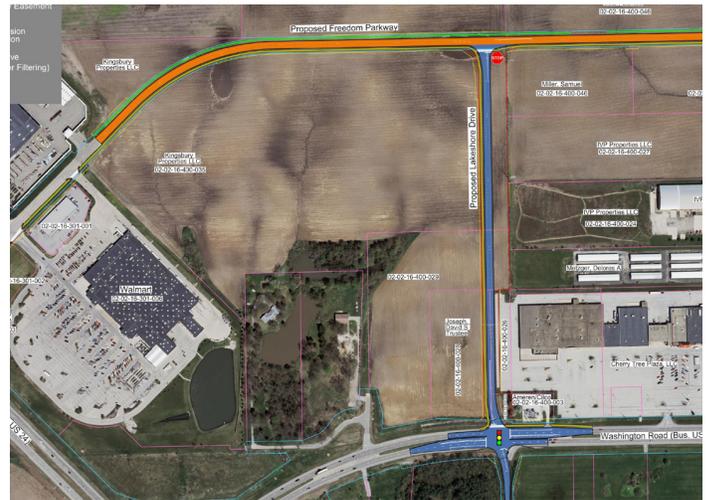


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- **Key Personnel:** M. Chris Hutchinson, PE, PTOE
- **Reference:** Brad Loomis, PE, PTOE, Tepas, LLC, 816.506.9284, Brad.loomis@tepa.com / Chris Hohowski, MoDOT, 314.275.1577, christopher.hohowski@modot.mo.gov



Freedom Parkway

TERRA provided traffic engineering services in conjunction with transportation, site/civil engineering, landscape architecture, and surveying services for the extension of Freedom Parkway from Menards to Cummings Lane. The City is looking to develop the adjacent agricultural land into industrial and "urban village" land uses. The traffic study portion of the project was to analyze the change in traffic patterns and project the potential new traffic to be generated by the extension of Freedom Parkway and Lakeshore Drive for the City of Washington IL. TERRA's team used ADT data from prior to the COVID pandemic to estimate the trips created by the existing uses to establish the base condition. TERRA was then responsible for developing estimated future trips to the area based on the proposed land uses and zoning designations of the area around the new roadways to be developed. TERRA's team created traffic models and evaluated the operation of several different traffic control methods including stop controlled, signalized intersection and roundabouts to help the City evaluate available options. TERRA provided the traffic study to the Illinois Department of Transportation to get concurrence on the analysis and then moved the project forward into the roadway design phase where our team developed the roadway sections, roadway geometry, traffic signals, and drainage design for the City.

- **Key Personnel:** M. Chris Hutchinson, PE, PTOE, Sanders Ong, EIT, Colin Coad, PE, PTOE, VMA
- **Reference:** Dennis Carr, PE, City Engineer, City of Washington, IL, 309.441.1136, dcarr@ci.washington.il.us

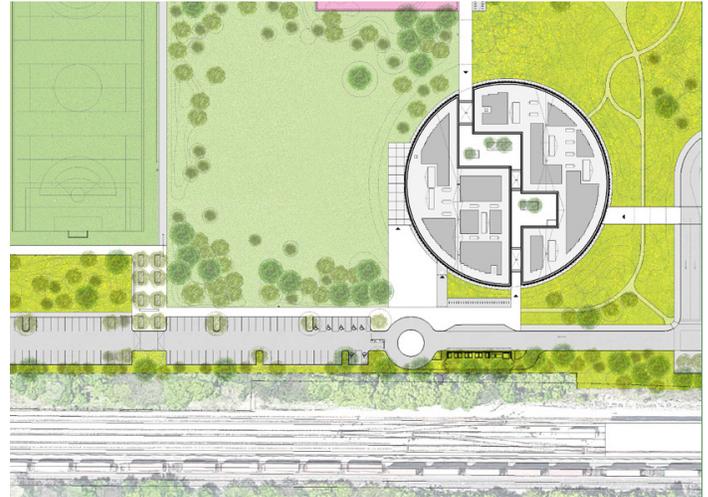
Relevant Projects



Traffic Data Collection + Study - IDOT Districts 3, 4, 5, 6, 7, 8 + 9

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- **Key Personnel:** Colin Coad, PE, PTOE; Sanders Ong, EIT;
- **Reference:** William Morgan, IDOT, 217.782.0378, William.Morgan@illinois.gov



Chicago Park District Headquarters

TERRA is responsible for the site/civil engineering, traffic engineering and surveying services associated with developing a 17-acre property near 48th Street and Western Avenue will be developed with the new Chicago Park District Headquarters building, new fieldhouse and new park amenities. TERRA was responsible for authoring the traffic study which evaluated the impacts of the new headquarters on Western Avenue and the adjacent CTA Orange Line Station. TERRA used video to collect vehicle and pedestrian data along both Western Avenue and Western Boulevard throughout the study area. During the analysis, TERRA noted numerous pedestrian crossings away from the marked crosswalks, including many two-stage crossings where pedestrians waited in the center of the roadway in unprotected areas for gaps to appear in oncoming traffic to finish crossing the street. TERRA made recommendations to improve pedestrian safety and provide a safe pedestrian crossing from the transit station and an existing senior home to the new park and headquarters building.

- **Key Personnel:** M. Chris Hutchinson, PE, PTOE, Julie Schmidt, PE, Colin Coad, PE, PTOE, VMA, Sanders Ong, EIT
- **Reference:** John Ronan, Principal, John Ronan Architects., 312.951.6600x21, ronan@jarch.com