



## Point of Contact:

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## COMPANY BROCHURE

TERRA Engineering, Ltd. (TERRA), has experience with various civil engineering projects 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 roadway design engineering, traffic engineering and TEAP services, as well as sidewalk and trails services to public and private clients. Attention to cost, historical significance, public input, and aesthetics have been important factors in reducing environmental objections and obtaining public acceptance and approval. TERRA uses nationally recognized Context Sensitive Solutions (CSS) processes that are also used by the Illinois Department of Transportation (IDOT).

TERRA is a Woman-Owned Based Enterprise (WBE), with over 26 years of experience throughout the Midwest, including Missouri, Illinois, Wisconsin, and Indiana, as well as internationally in Qatar, Saudi Arabia, and Lebanon. We look forward to providing services to Missouri's LPA agencies in 2020!

## EXPERIENCE /

- Main Street Streetscape Old Monroe, Missouri
- Folkers Avenue Reconstruction Peoria, Illinois
- Washington Street Improvements Peoria, Illinois
- Warehouse District TIGER II Complete Streets Peoria, Illinois
- Cal-Sag Multi-Use Path Cook County, Illinois
- MoDOT Route 21 Signal Optimization St. Louis County, Missouri
- Main & University Intersection Improvements Peoria, Illinois
- Interstate 74 Reconstruction Peoria, Illinois
- Harrison Impact Zone Improvements Peoria, Illinois
- Roosevelt Road Streetscape Improvements Berwyn/Cicero/Oak Park, Illinois
- National Geospatial Agency St. Louis, Missouri
- Downtown Streetscape Revitalization Elmwood, Illinois
- 2017 World Rowing Championship Traffic Management Study Sarasota & Brandon, Florida
- South Boulevard TCSP Program Oak Park, Illinois
- Western Avenue Reconstruction Peoria, Illinois
- University & Glen Improvements Peoria, Illinois
- West Vliet Street Reconstruction Milwaukee, Wisconsin
- University of Chicago 58th Street Streetscape Chicago, Illinois
- Northwestern University Chicago Campus Streetscape Chicago, IL

## SERVICES /

- Roadway Planning & Design
- Feasibility Studies
- Roadway Drainage
- Urban & Rural Interstate/Freeway Design
- Simple & Complex Interchange Planning & Design
- Traffic Data Collection
- Corridor Studies
- Intersection / Roadway Capacity Analysis
- Intersection Design Studies (IDS)
- Landscape Architect
- Traffic Modeling (utilizing VISSIM, Synchro, HCS, Sidra, TruTraffic, etc.)
- Traffic Impact Analysis
- Traffic Signal and Stop Sign Warrant Analysis
- Traffic Signal Design / Interconnect
- Cost Estimating & Value Engineering
- Construction Staging & Traffic Maintenance Planning
- Roadside Safety & Barrier Warrant Analysis
- Trails & Parks

## MANAGEMENT TEAM (WBE) /

KAREN STEINGRABER, PE, *President*  
GEORGE GHAREEB, PE, F.ASCE, *Associate Vice President*

JAMIL BOU-SAAB, PE, *Executive Vice President*  
ERIC THERKILDSEN, PE, *Associate Vice President*

## MAIN & UNIVERSITY INTERSECTION IMPROVEMENTS (Peoria, Illinois)

TERRA worked with the City of Peoria and Bradley University on an aggressive design-build project to complete the redesign and reconstruction of the Main and University intersection, along with regional pedestrian improvements and vehicular traffic calming measures. The project included replacement of existing infrastructure, streetscape enhancements, pedestrian upgrades, and new traffic signals. TERRA assisted the City throughout the public involvement process, and developed a comprehensive plan for the intersection and regional improvements that considered public input. TERRA provided site civil engineering, landscape architecture, and construction engineering services on this fast-track project which allowed 6-months for design and construction. The City was intent on managing total project costs while providing a high-quality product. The intersection reconstruction work included a "road diet" reducing it from six lanes to three, and creating curb bump outs with landscaped rain garden planters and decorative seat walls to improve the streetscape. The intersection was

## RELEVANT ROADWAY PROJECTS



raised to create a "tabletop," placing the focus on pedestrians and calming traffic speeds. Signal improvements included new traffic signals which incorporate an all-pedestrian phase, allowing diagonal crossings. Regional improvements include new midblock crosswalks with in-roadway lighting and pedestrian activated beacons around the Bradley University campus, along with neighborhood vehicular traffic calming measures to minimize traffic impact due to reduced intersection capacity.

Client: City of Peoria | Bill Lewis | 309.494.8800 | [blewis@peoriagov.org](mailto:blewis@peoriagov.org) | Dates: 2013 - 2014

Services: Traffic Engineering | Traffic Studies | Transportation Engineering | Surveying | Landscape Architecture

Key Personnel: Chris Hutchinson, PE, PTOE | Julie Schmidt, PE | Colin Coad, PE, PTOE, VMA

## MAIN STREET STREETScape (Old Monroe, Missouri)

The City of Old Monroe has received funding from the Missouri Department of Transportation through the Local Public Agency process to make improvements along Main Street. The existing street is very fat with drainage problems and sidewalks which



do not meet Americans with Disability Act (ADA) requirements for access. The City plans to use the funding to install new sidewalks, which are ADA compliant, new curbs, pedestrian lighting, storm water facilities and aesthetic enhancements. TERRA worked with the City through the conceptual phase to discuss the ultimate plan for the four block Main Street Corridor. The Mayor and City Council provided their vision of what they would like to see incorporated into the streetscape. TERRA then created a concept that included all of the items discussed and estimated the cost of the overall improvements. TERRA then worked with the City to prioritize sections

of the project to create an implementation plan and help the City determine what could be built with their current funding and what could be completed in subsequent phases with additional funding. TERRA is currently completing the final plans for the first phase of the project.

Client: City of Old Monroe | Michael Padella, Mayor | 636.661.5112 | [mcpadella@gmail.com](mailto:mcpadella@gmail.com)

Dates: Aug 2013-Sept 2015 | Services: Municipal Engineering | Transportation Engineering | Landscape Architecture

Key Personnel: Chris Hutchinson, PE, PTOE (Project Manager)

## FOLKERS AVENUE RECONSTRUCTION (Peoria, Illinois)

TERRA was retained to design two blocks of Folkers Avenue in front of Peoria's Trewyn School. The project was meant to increase pedestrian safety in front of the school, where previously there was no barrier between sidewalk and roadway. Improvements included an added curb and gutter, new curb bump outs at intersections, added table top (speed table) to existing intersection, and a reconstructed the pavement structure. The project also reconstructed and re-plumbed an existing storm sewer to reduce load on CSO (combined sewage overflow). This was accomplished using permeable paver parking lanes and drywells. Also, parking lanes sit on 4-foot deep stone layer to store storm water of 10-year food, and below the stone layer is sandy soil to drain. Additionally, landscaping elements were added to sidewalk in front of school, and increased sidewalk area, which include sidewalk planters, curb planters, ornamental trees, shade trees; ornamental lights to sidewalk; trash cans, park benches in school colors (red); and a seat wall with planters at school's main entrance. Also, the public voted on furniture style and color, and paver color. TERRA coordinated design with City of Peoria and Trewyn School.

Client: City of Peoria | Steve Letsky, PE | 309.494.8800 | [sletsky@peoriagov.org](mailto:sletsky@peoriagov.org) | Dates: May 2017-August 2017

Services: Municipal Engineering | Transportation Engineering | Landscape Architecture | Surveying

Key Personnel: Chris Hutchinson, PE, PTOE | Alex Badaoui, EIT

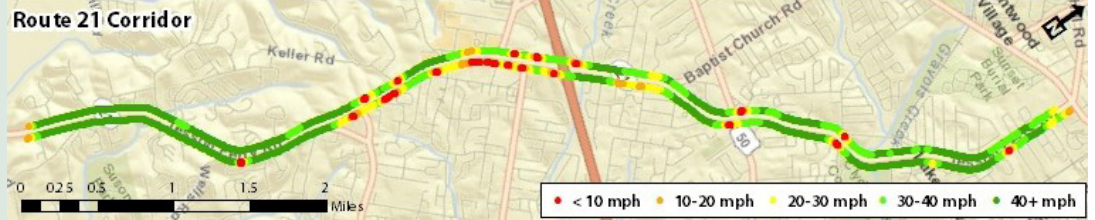
TERRA Engineering, Ltd. | [www.terraengineering.com](http://www.terraengineering.com) | 314.395.9899



## MODOT TRAFFIC COUNTS & SIGNAL OPTIMIZATION OF ROUTE 21 (St. Louis County, Missouri)

## RELEVANT TRAFFIC PROJECTS

TERRA was chosen as part of a team selected to perform signal timing and coordination work for 19 signals along Missouri Route 21 in St. Louis County, Missouri. The goal of the project was to improve coordination of the existing signals in an effort to reduce congestion and improve air quality in the area. TERRA performed traffic data collection for the project, using Miovision automatic video data collection systems, to record 48-hours of consecutive, weekday traffic and



peak weekend traffic from Saturday and Sunday traffic. Additionally, TERRA provided Tru-Traffic software and GPS tracking systems to record the existing travel time runs to determine the stops, average speeds, travel times, and other pertinent data from the corridor. TERRA completed the traffic modeling of the corridor using Synchro traffic modeling software to determine new signal timings for the corridor, including developing morning, midday, afternoon, and off-peak timing patterns, as well as weekend timing patterns, as required for the corridor. Additional analysis included evaluating Flashing Yellow Arrow (FYA) implementation and evaluation of modifications to protected/permitted left turn phasings. After completing the new signal timings, the Team worked with the Missouri Department of Transportation (MoDOT) to implement the new timings into the signal controllers in the field. Our Team then observed and fine-tuned the signal timings in the field based on observations, as well as responded to comments received at the MoDOT call center. Once the fine-tuning was completed, post implementation travel time runs were recorded for comparison to the existing conditions to provide a metric for evaluating the improvements. The project included a report providing all of the calculations and data from before and after, as well as calculations of emissions and fuel savings which should be realized from implementing the signal timing changes.

Client: MoDOT & AMEC | Brad Loomis, PE, PTOE (Tepa, LLC) | 816.506.9284 | brad.loomis@tepa.com

Dates: 2014 - 2015 | Services: Traffic Engineering | Traffic Studies

Key Personnel: Chris Hutchinson, PE, PTOE (Project Manager)

## 2017 WORLD ROWING CHAMPIONSHIP TRAFFIC MANAGEMENT STUDY

*Sarasota & Bradenton, Florida*

TERRA Engineering was asked to prepare a traffic management plan for this 10-day sporting event to be held in the United States for the first time since 1994. This event brings athletes, coaches, officials, and spectators from throughout the world for the competition. TERRA was responsible for authoring a traffic management plan in coordination with Sarasota County, SP+ Gameday, FISA officials, and other local stakeholders. The plan included vehicle trip estimating, traffic flow analysis, route planning, emergency management plans, hurricane evacuation plans, incident management plans, traffic control measures, variable message sign plans, parking lot planning and evaluations, transit availability analysis, evaluation of participant shuttle plans, bicycle plan, and pedestrian route planning.



Client: 2017 World Rowing Championships Committee | Mike Witte | 407.436.5543 | mwitte@spplus.com

Dates: April 2017 - October 2017 | Services: Traffic Engineering | Traffic Studies

Key Personnel: Chris Hutchinson, PE, PTOE (Project Manager)

## VARIOUS TRAFFIC COUNTS | *Various Locations (Missouri, Illinois, Indiana, Florida, Saudi Arabia)*

We've performed traffic counts for a variety of clients, including, but not limited to the following:

- |                          |                              |                               |                |                 |
|--------------------------|------------------------------|-------------------------------|----------------|-----------------|
| - Wildwood, MO (City of) | - St. Louis, MO (City of)    | - Indiana DOT                 | - Illinois DOT | - Missouri DOT  |
| - Lochmueller Group      | - HDR Engineering            | - Chicago Public Schools      |                | - Soldier Field |
| - Great Rivers Greenway  | - Washington University (MO) | - St. Charles, MO (County of) |                | - HR Green      |

## CLIENT TESTIMONY

"TERRA has provided the City with professional engineering services for a number of years. They have always been a dedicated partner and instrumental team member of the City's programs. TERRA is responsive, dedicated and client-conscious professionals and always looking to challenge the department of public works with value added thoughts to projects. TERRA delivers these expectations in a professional manner that creates a relationship rather than a business atmosphere."

- Scott Reeise, PE, *Former Director of Public Works* | City of Peoria