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November 15, 2013

Missouri Department of Transportation  
 105 West Capitol Avenue  
 Jefferson City, MO 65102  
 via email to [MaryAnn.Jacobs@modot.mo.gov](mailto:MaryAnn.Jacobs@modot.mo.gov)

**Re: Traffic Engineering & TEAP**

Garver’s professionals offer a valuable set of skills that makes Garver a trusted advisor to county and municipal clients. Garver has a history of successfully providing similar on-call services for departments of transportation in Alabama, Arkansas, Mississippi, Oklahoma, and Tennessee. Garver is on MoDOT’s approved consultant prequalification list, and we look forward to providing engineering design services and serving as a trusted advisor to county and municipal clients in Missouri.

**GENERAL EXPERIENCE OF FIRM**

Garver’s team of professionals has a passion for improving our transportation systems’ safety, efficiency, and quality of driving experience. By having a team focused on traffic engineering, we provide a high degree of technical competence and develop solutions to complicated projects. Our clients range from departments of transportation to local developers, and this diversity enables us to work on a variety of projects, including city-wide traffic studies, signal optimization and design, and operational and geometric analysis to support intersection/corridor improvement plans. Our team’s emphasis on quality and attention to detail extends to both our analysis means (standard *Highway Capacity Manual* methodologies and micro-simulation) and design considerations. Our traffic capabilities include the following:

**Traffic Signal Design:** Garver’s traffic team has designed more than 200 signalized intersections throughout our service area. Projects include new traffic signal installations, traffic signal replacement, temporary traffic signal plans, and traffic signal modification plans. We have the capability to develop and implement timing plans and determine the appropriate signal phasing and locations for detection. Typical signal design features include hybrid beacons, communication/detection system specifications, pedestrian accommodations, and railroad/emergency pre-emption systems.



**Traffic Studies:** Garver has performed traffic studies for virtually every type of traffic engineering situation—from simple, isolated intersections to complex interchange justification studies involving trip generation and five-leg roundabouts. Our capabilities include data collection and field observation, origin-destination studies, traffic projections/trip generation, traffic signal timing, traffic simulation, signal warrant analysis, access management, safety studies, geometric/operational analysis, and planning and public involvement.

**Traffic Design for Intersection/Corridor Improvements:** Garver’s seamless integration of roadway and traffic engineering elements during the project development process ensures client satisfaction. Our traffic team has extensive experience in developing maintenance of traffic and detour plans and producing detailed directional/informational signs using SIGNCAD. In addition, we have expertise in the areas of permanent signing plans, pavement marking layouts, and channelization. Our designs include proper intersection turning radii and stop-bar locations using AutoTURN software, appropriately sized turn lanes, and traffic signal phasing for efficiency and safety.



“ The comprehensive IDL safety study that Garver prepared exceeded the Department’s expectations—once again. In fact, it was accepted by the Federal Highway Administration without comments. ”

~ David Streb, PE, Former Director of Engineering, Oklahoma Department of Transportation

## PAST PERFORMANCE

We have an extensive performance record with on-call contracts with our transportation clients, as detailed below and shown graphically.

### Arkansas State Highway and Transportation Department On-Call Design Services, Statewide, Arkansas

Garver has a nine-decade relationship with the Arkansas State Highway and Transportation Department (AHTD), including consecutive on-call contracts since 2002. Projects assigned to date include traffic signal design, Safe Routes to School accommodations, surveys, roadway design, and bridge design. To date, the signal design on-call agreement has included 87 task orders for 143 signalized intersections. These projects generally include preparing traffic signal plans, pedestrian ramps, Safe Routes to School projects, signal timing plans, and pavement marking plans.

Reference: Eric Phillips, 501-569-2566, Eric.Phillips@arkansashighways.com

### Mississippi Department of Transportation Roadway and Traffic On-Call Services, Statewide, Mississippi

Since 2001, Garver has worked directly for the Mississippi Department of Transportation (MDOT) Traffic Division on projects assigned under master contracts for both traffic and roadway. These projects have included traffic studies, roundabout analysis, permanent signing plans and details, traffic signal design (including ITS elements), intersection improvements, traffic signal timing updates, and safety studies.

Reference: James Sullivan, 601-359-1454, jasullivan@mdot.state.ms.us

### City of Norman On-Call Design Services, Norman, Oklahoma.

Through our on-call contract with the City of Norman, Garver has been assigned numerous traffic projects. These task orders have included updates to signal timing splits/offsets/phase sequence along the city's busiest arterial routes and traffic signal design and plan development, including fiber optic interconnect, pavement markings, and sidewalk and wheelchair ramp improvements. In addition to our on-call work in Norman, Garver has also provided the city with intersection studies, conceptual corridor planning, conditions documentation for their comprehensive transportation plan, and complex traffic simulation analysis for proposed interchange modifications.

Reference: David Riesland, 405-329-0528, david.riesland@normanok.gov

## QUALIFICATIONS OF PERSONNEL

By serving in leadership roles and being involved in industry organizations, Garver's traffic team stays informed of current practices and technologies. Garver's traffic team includes employees certified as professional traffic operations engineers, professional engineers, and Level II International Municipal Signal Association traffic signal field electricians. The following brief resumes detail the qualifications of Garver's key personnel who will lead task orders assigned under this contract.

**Nicci Tiner, PE, PTOE** is a Senior Project Manager who is responsible for managing Garver's Traffic Group. She has 25 years of engineering experience. Her project experience includes traffic signal design; traffic studies that include intersection analysis, weave capacity, trip generation, interchange justification analysis, and signal warrant analysis; and maintenance of traffic plans.

**Mike Spayd, PE, PTOE** is a Project Manager with 10 years of experience that encompass a wide variety of traffic engineering and planning projects. He has led a variety of engineering studies, including major corridor studies, traffic signal retiming studies, interchange justification/modification studies, parking availability studies, traffic signal warrant studies, and traffic impact studies. He has worked on ITS architecture and deployment plans, roadway signing and marking plans, temporary traffic control plans, and intersection and signal design. Mike is proficient in a variety of traffic engineering analysis and simulation programs, including CORSIM, Synchro, and HCS.

## Alabama

### Department of Transportation



Transportation Support/Design: 2003, 2006, 2008, and 2010

Surveying: 2003, 2006, 2008, and 2010

## Arkansas

### State Highway and Transportation Department



Design Services: 2002, 2004, 2006, 2009, and 2011

Surveying: 2001, 2003, 2005, 2008, and 2011

Construction Engineering and Inspection: 2013

## Mississippi

### Department of Transportation



Bridge Design: 1995, 1997, 2001, 2004, 2007, and 2011

Traffic Engineering/Design: 2001, 2004, and 2011

Roadway Design: 1997, 2001, 2007, and 2011

CE&I: 2009 and 2012

Field Surveying: 2009

Value Engineering: 2012

## Oklahoma

### Department of Transportation



Bridge Redecking and Rehabilitation: 2007, 2009, and 2011

NEPA and Environmental (CIRB): 2007, 2008, 2009, and 2012

Survey and GPS Surveying: 2006, 2009, and 2011

Reconnaissance Data Collection: 2006, 2009, and 2011

CE&I: 2010

General Engineering Services: 2007 and 2010

Hydrology and Hydraulics: 2011

On-Demand Environmental Studies: 2010 and 2012

## Tennessee

### Department of Transportation



Bridge Repair, Retrofit, and Scour Analysis: 1991, 1993, 1997, 2001, 2006, and 2010

CE&I: 2011

**Blake Martin, PE, PTOE** is a Project Manager with 10 years of experience. His responsibilities include providing construction management and engineering services on a wide variety of construction projects. Blake is IMSA certified, and his responsibilities include overseeing signal installation and modifications. He has extensive experience in designing traffic signal systems, preparing traffic studies, and preparing maintenance of traffic plans.

### **FAMILIARITY/CAPABILITY**

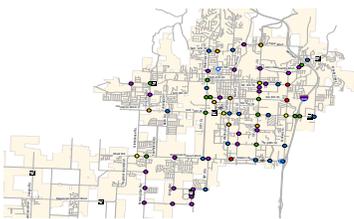
Over 90% of Garver's business is with repeat municipal, state, and federal government clients, so we understand the specialized LPA regulations and know how to satisfy project requirements in a timely and satisfactory manner and will be diligent in complying with all requirements. Garver works hard to maintain its knowledge and excellent working relationship with various agencies. Our approach to traffic engineering is extremely thorough and detail-oriented, as we believe that the summation of small traffic details can have a large impact on an overall system.

**Garver routinely delivers projects with federal funding. Listed below are representative projects meeting federal requirements.**



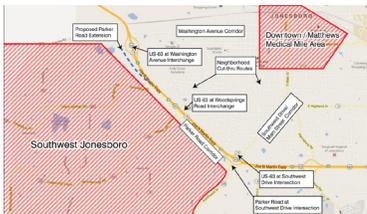
#### **12th Avenue and Robinson Street Corridors Traffic Signal Timing Plans, Norman, Oklahoma**

Garver recently provided updates to the city's time-of-day signal timing plans at 29 intersections along two busy arterials. Modifications to splits/offsets/sequencing were performed to introduce progression to the corridors and minimize overall delay. Multiple timing updates were developed for each corridor to address current conditions, which included nearby construction projects that were affecting operations, and short-term future conditions (after the completion of the nearby construction).



#### **Bentonville City-Wide Traffic Study, Bentonville, Arkansas**

This comprehensive study for the City of Bentonville included a preliminary analysis of 84 intersections to determine the most critical locations based on current level of service, crash rates/severity, and growth potential. Through this process, 14 intersections were carried forward into a detailed traffic analysis phase, resulting in short, mid, and long-range improvement recommendations with cost estimates for each location. The project also consisted of reviews of the city's master street plan and associated typical sections and the most recent trail, pedestrian, and bicycle plans.



#### **Parker Road Extension Origin-Destination Study, Jonesboro, Arkansas**

This project featured video license plate recognition and online questionnaire origin-destination studies to assess the demand between southwestern Jonesboro and the downtown/medical district. Based on the anticipated demand, the viability of a proposed extension of Parker Road was evaluated for improvements in delay, connectivity, and safety. This effort included collection/analysis of current traffic data, expected trip generation and traffic projections, travel time runs for alternative routes, and development of a cost-benefits comparison.



#### **West Lindsey Street Corridor Planning, Norman, Oklahoma**

Garver aided the city in producing a new vision for an older suburban arterial. Recommendations included bike lanes, enhanced sidewalks, lighting, aesthetic improvements, and access management strategies, including a raised median, driveway consolidation, and turning movement restrictions. A thorough review of corridor-wide crash data indicated a crash rate of nearly five times the state average.

### **ACCESSIBILITY**

Garver's breadth of experience and personnel enables our teams to quickly react to client and project needs. The proximity of our staff will allow us to provide local counties and municipalities with high-level, responsive service. Garver's offices in Kansas City, Missouri; Tulsa, Oklahoma; and Fayetteville and North Little Rock, Arkansas are within a few hours driving distance of project locations throughout the state. In addition to being easily accessible for site visits and meetings, our staff's capacity allows us to respond promptly to any project needs. We will utilize web meetings, conference calls, and web-based file sharing to communicate with the owner.

### **SUMMARY**

Garver is committed to providing excellent service in a timely manner. Our understanding of time, budget, and quality has resulted in a successful history of on-call projects. We are anxious to extend the same level of high-quality and responsive transportation service to counties and municipalities throughout Missouri.

# Exceeding Expectations

Transportation for Local Projects



**Garver is about personal service –**  
engaging in your vision,  
understanding your needs,  
delivering custom designs.

#### **Our Customers Are #1**

We're passionate about what we do. We place a strong emphasis on customer service, and our strong work ethic results in quality projects and lasting relationships.

#### **Project Success**

We want you and your project to succeed—which is why we invest resources in cutting-edge technology and the very best employees. We really enjoy making good things happen for our clients.

#### **Responsive Service**

When our clients have a request or need an answer, we're quick to respond. Face-to-face communication and regular interaction provide a valuable partnership to meet project goals.



# Improving Communities

The Garver name represents nearly a century of community betterment. Well-designed infrastructure advances our common interest to elevate the places we work, live, and play.

Garver takes transportation projects from concept to reality with innovative design that minimizes costs and construction schedules, while providing an efficient facility with a longer service life.

The Garver Transportation Group optimizes in-house resources for planning, environmental services, design, and construction for your project.

## Roadways

- Alignment studies
- Local roads and streets
- Street enhancements
- Arterials to urban streets and interchange design
- Pavement evaluation and rehabilitation
- Utility design and relocation

## Bridges

- Short and long-span structures (steel and concrete)
- Bridge inspection, rehabilitation, widening, and seismic retrofits
- Sound walls and retaining walls
- Drainage structures
- Hydraulic and grade separation structures

## Traffic

- Studies including Operational and Geometric Analyses
- Computer Simulations
- Signal Design, Optimization, and Coordination
- Intersection and Roundabout Design
- Signing Plans

## Pedestrian and Bicycle Facilities

- Trails and Bikeways
- Combined Use Facilities
- Pedestrian/Bicycle Bridges and Underpasses
- Sidewalks, Wheelchair Ramps, and Pedestrian Signals
- Safe Routes to School

## Construction Engineering and Inspection Services

- Contract Administration
- On-Site Resident Engineering
- Shop Drawing Management
- Materials Testing Coordination
- Final Project Field Close Out and Audits
- Bridge and Structure Inspections

## Staff Certifications

- Professional Traffic Operations Engineers
- IMSA Traffic Signal Technician
- ACI, NCAT, etc. Certified Inspectors
- Certified Flood Plain Managers
- FHWA Certified Bridge Inspectors

## Additional Services

- Funding assistance
- Operations assistance
- HMI/SCADA integration
- Software application engineering
- Stormwater utilities
- Residuals management

# Clients

## Cities and Counties

### Arkansas

- Little Rock
- North Little Rock
- Sherwood
- Springdale
- Fayetteville
- Rogers
- Bentonville

- Pulaski County
- White County

### Mississippi

- Rankin County

### Oklahoma

- Tulsa
- Oklahoma City
- Norman
- Jenks
- Sand Springs

- Tulsa County
- Choctaw County
- Latimer County

### Texas

- Dallas
- Frisco
- Plano



## Bridges

Garver has the expertise to provide a full range of structural design services for new and existing bridges, including steel and concrete superstructures, substructures, multi-level interchanges, retaining walls, and drainage and pedestrian structures. Our bridge designs range from short concrete spans on pile bents to major river crossings founded on dredged caissons. In addition, our staff offers expert bridge inspection services, including engineering reports and rehabilitation plans.

## Roadways

Roadway design is a complex puzzle of intricate parts that involves separate but interconnected design decisions. With miles of designs under our belt, Garver's engineers are exceptional at considering all factors in developing an optimal and economical design. Our experience includes rehabilitation; overlay and widening; reconstruction; pavement design, condition analysis, rehabilitation, and reclamation; horizontal and vertical alignment improvements; drainage improvements; retaining walls; lighting; utility relocation design; and property acquisition document preparation.

## Traffic

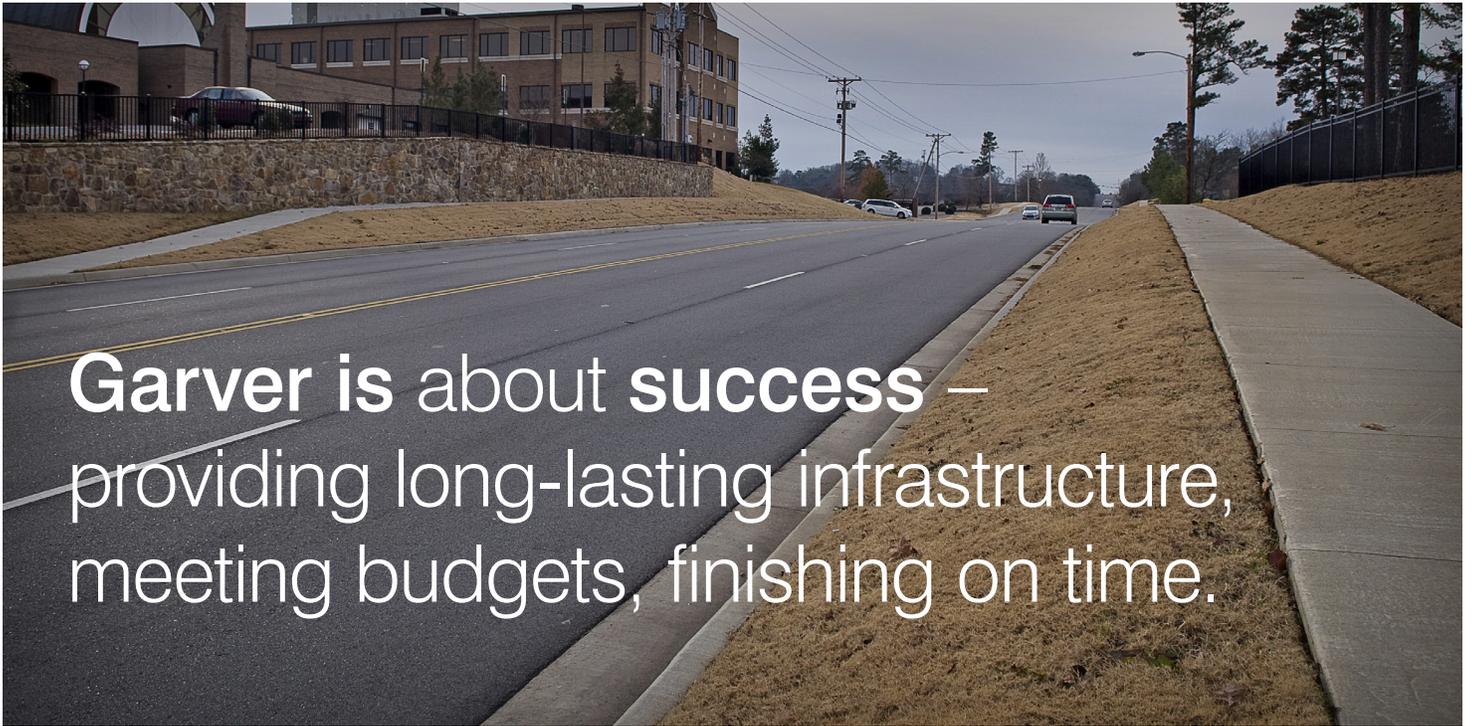
Our engineers use proven techniques to achieve the safe and efficient movement of people and goods. Our experienced staff analyze conditions and gather data, develop calming devices to improve pedestrian safety and control vehicular movement and speed, create signing plans, prepare maintenance of traffic plans to manage vehicular flow during construction, to inform motorists of changing traffic patterns through intelligent transportation systems, and design highly functional intersections with optimal signalization.

## Pedestrian and Bicycle Facilities

Pedestrian facilities are essential in creating a balanced municipal transportation system. As part of our commitment to healthy and safe communities, Garver recognizes the importance of pedestrian-friendly environments. Our designs incorporate trails, bikeways, safe routes to school projects, ADA-compliant wheelchair ramps, pedestrian signals, and pedestrian/bicycle bridges.

## Construction Engineering and Inspection

The Garver Construction Services Staff has the experience and ability to handle all of your project needs. We involve your staff and serve as your representative in the field—working with contractors and monitoring the quality of construction. Garver provides construction services ranging from periodic observation to full-time resident inspection services.



Garver is about **success** – providing long-lasting infrastructure, meeting budgets, finishing on time.

“Garver personnel were very **instrumental** in keeping the project moving. The project was substantially complete **three months ahead** of schedule.”

Ellen Norvell  
City Engineer  
Sherwood, Arkansas

“Garver’s design was just **flawless**; the entire process was **exceptional**. Garver provided a **great design**, and they answered every email and responded to every phone call in a **timely** manner during the construction process.”

John Burton  
Construction Manager  
Pulaski County, Arkansas

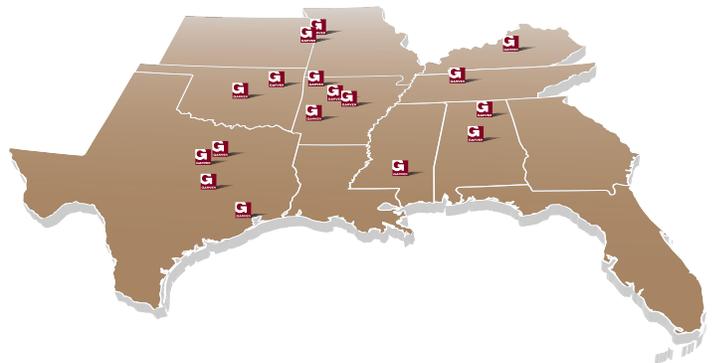


Frank (Blake)  
Blakemore, PE

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Garver is a multi-disciplined firm committed to quality in our designs, integrity in our relationships, and trust built through decades of exceptional attention to detail.



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