

**CITY OF JONESBORO**  
**AGREEMENT FOR ENGINEERING SERVICES**  
**Southwest Jonesboro Transportation Study**

This Agreement entered into and executed this 17<sup>th</sup> day of Nov 2003, by and between the City of Jonesboro (the City) acting by and through its Mayor and Associated Engineering and Testing, LLC (AET).

Whereas, the City of Jonesboro is planning to have a traffic improvement study conducted in southwest Jonesboro for the purposes of identifying, justifying, costing, and prioritizing potential capital improvements and improvements to existing streets that will be needed to adequately handle traffic.

And, Whereas the City of Jonesboro's forces are fully employed on other urgent work that prevents their early assignment to the aforementioned work; and Whereas, AET's staff is adequate and well qualified and it has been determined that its current work load will permit completion of the project on schedule;

Now therefore, it is considered to be in the best public interest for the City of Jonesboro to obtain the assistance of AET's organization in connection with said engineering services. In consideration of the faithful performance of each party of the mutual covenants and agreements set forth hereinafter, it is mutually agreed as follows:

The City of Jonesboro agrees to employ AET to perform, and AET agrees to perform professional engineering services in connection with the project set forth in the sections to follow. The City of Jonesboro agrees to pay AET as specified in the sections to follow as full and final compensation for work accomplished.

**1. Introduction**

The City of Jonesboro, Arkansas has engaged the services of Associated Engineering and Testing, LLC (AET) in the development of the Southwest Jonesboro Transportation Improvement Study. Objectives included with this proposal are to identify existing traffic concerns, justify proposed transportation improvements, and provide estimated costs, and prioritize new roadway corridors and improvements of existing streets that will be needed to adequately handle traffic flow within the study region. The proposed work program is described in the following phases.

AET will lead a project kick-off meeting with the City. The purpose of this meeting is to review the study scope, schedule, confirm points of contact, establish the study tasks, verify billing procedures, and discuss the basic study concept, approach, and work program.

This study will be developed in five phases:

- Phase I: This phase of work consists of Data Collection involving six items.
- Phase II: This phase requires Traffic counts conducted by count and turning movement.
- Phase III: Reviews Existing Plans associated with Master Plans, Zoning and planned improvements.
- Phase IV: Conduct the Network Analysis and Identifies the Improvements. This phase involves twelve items.
- Phase V: This phase is the Reporting portion of this project.

## **2. Proposed Basic Scope of Services**

### **Phase I - Data Collection**

#### **A. Delineate Study Area**

In coordination with the City's Planning Department, delineate the limits of the study area for the Southwest Jonesboro Transportation Plan. Determine traffic areas of concern within the subject region and review additional traffic generators that may affect the present study region. Should these existing or proposed traffic generators warrant additional review, these regions will be included within the Southwest Jonesboro Transportation Improvement Study. Prepare study area base map utilizing available street maps, topographic maps, and aerial photography.

#### **B. Define Design Year**

The design year represents the future conditions that improved transportation facilities are intended to serve. In some cases forecasts are unaffected by what is planned. In other cases transportation improvements may affect the future. The base year for the plan will be year 2000, enabling use of Census 2000 data as the base for forecasting future conditions. A 20-year plan is an appropriate planning horizon, with interim year forecasts for 5-years and 10-years. Therefore, it is our recommendation that forecast dates should target 2020 as the design year, with interim forecasts for 2005 and 2010.

#### **C. Identify Growth Rate**

AET will review all available documents related to traffic and transportation in the City. The review of current traffic and transportation trends with City Staff, designated City Council Members, local public and private entities concerning current and future considerations will be included. Historical traffic volume counts available for the Jonesboro area will be reviewed to determine the annual growth trends for traffic in the study area vicinity. Additionally, planning and zoning information will be reviewed along with current trends for population, housing, and employment growth based on available Census data for 1980, 1990, and 2000. Census data growth rate for the City of Jonesboro will be reviewed with current and projected data available from the State Economic and Community Development, Arkansas State Highway and Transportation Department (AHTD), and the Jonesboro Chamber of Commerce. Both current conditions and projected trends will be summarized for inclusion in the Southwest Jonesboro Transportation Plan. Average annual growth rates will be identified for later use in development of the traffic forecasts.

#### D. Existing Network Conditions

Generalized existing conditions for roadways and traffic control devices will be identified in the study area. Available information will be obtained from the City and field observations will be performed for a “windshield survey” of existing conditions. The inventory of existing roadways will include the following features:

- Roadway name and highway designation (where applicable)
- Existing functional classification
- Access control (none, partial, full)
- Prevailing right-of-way width
- Average pavement width
- Type of surface (concrete, asphalt, or unpaved)
- Number of travel lanes
- One-way or two-way traffic operation
- Turn lane locations
- Median type (raised, flush, depressed, or none)
- Presence or absence of on-street parking
- Presence or absence of sidewalks, both sides or one-side only
- Posted speed limits
- General pavement condition (good, fair, poor)
- Signalized intersections
- Two-way and four-way stop sign controlled intersections
- Grade separations or interchanges
- Railroad/roadway grade crossings with type of crossing protection (crossbucks, lights, gates)
- Transit Systems
- Bike Paths (Designated/Traveled)

The existing roadway and traffic control conditions will be documented in a spreadsheet database. An existing conditions map will be prepared showing the right-of way width, number of lanes, signalized intersections, and grade separations or interchanges.

#### E. Gather Available Traffic Counts

This task includes the research of availability of existing pedestrian and vehicle turning movement count data, 24-hour average daily traffic counts conducted by the City or others and assembly of this data for use in the analysis. This task additionally includes research and assembly of information and data relative to the existing traffic operations at existing signalized intersections included in the project. This information will include traffic signal placement information, traffic signal phasing and traffic signal timing information for the intersections.

#### F. Conduct Public Meeting

AET will coordinate one (1) two-hour meeting for the general public regarding the City's transportation-planning program and to identify public traffic concerns in the Southwest Jonesboro study area. This meeting will consist of an open house forum at which AET will coordinate small group discussions intended to seek citizen input on program goals, problem areas, and citizen support for potential improvement alternatives. The public will have an opportunity to voice their concerns. A summary of the meeting, including the public issues and comments identified by participants, will be provided.

AET will coordinate two (2) two-hour meetings for the Transportation Advisory Committee during the plan development process. These meetings will provide an updated status report, alternatives discussion, and opportunity for additional comments and recommendations. Feedback received from the committee will be considered in development of the recommended transportation plan.

### **Phase II - Traffic Counts**

#### **A. Conduct Traffic Counts**

Additional 24-hour traffic volume counts necessary for roadway segment level-of-service analysis will be taken as needed. Data will be prepared in both tabular and graphic formats.

#### **B. Conduct Turning Movement Counts**

Work associated with this task involves the collection and compilation of vehicle turning movement count data required for the intersection capacity and level-of-service calculations. This task includes the preparation of field data forms necessary for collection of manual turning movement counts at the intersections of the study area and programming of electronic counters used to conduct counts. This field data will be summarized and assembled in a form appropriate for use in intersection capacity analysis calculations to be undertaken as a part of this project

### **Phase III - Review Existing Plans**

#### **A. Review Existing Master Street Plan**

Review existing Master Street Plan for the study area of the City and provide recommendations on Master Street Plan issues, classifications, routes, standards, changes and street design standards, street classifications and functional criteria.

#### **B. Review Existing Land Use Plan/Zoning/Ordinances**

Existing land uses in the study area will be reviewed to identify major traffic generators. Maps showing the generalized land use patterns and major traffic generators will be prepared for the study area. The City's adopted Ordinances (Zoning, Utilities, Etc.) and Official Zoning Map will be reviewed to identify established zoning district classifications and the range of permitted uses for each district designated within the study area. A map showing existing zoning in the study area will be prepared. Existing generalized land use and zoning will be compared to identify potential future land use changes impacting traffic circulation needs in the study area.

#### **C. Identify Planned Improvements/Developments**

AET will consult with City Staff, Jonesboro Chamber of Commerce, AHTD, State Economic and Community Development, and local developers, to identify and highlight planned or known development projects anticipated within the study area during the 20-year planning horizon.

## **Phase IV - Conduct Network Analysis & Identify Improvements**

### **A. Project Traffic Volumes**

Work associated with this task will involve determining if any traffic volume projections have been made by the City of Jonesboro, the AHTD or MATA for the areas of the City included in this project. Any projections for the areas studied will be obtained if they exist. In the absence of projections made by others, traffic projections will be made to a designated future design year (year 2020) and two interim years (2005 and 2010). These projections will be used in capacity analysis calculations conducted as a part of this study. Before using these data, their validity will be confirmed by City officials. 2005 and 2010 will represent traffic conditions for the initial operating year for proposed short-term and long-term improvements, and 2020 will represent the design year conditions.

### **B. Perform Existing Traffic/Network Analysis**

Work associated with this task will include capacity analysis calculations for both the a.m. and p.m. peak hours for the traffic volumes for the "non intersection" areas of possible street improvement areas. This analysis will be conducted to determine the general operating conditions that can reasonably be expected under current traffic volume loading based on the number of lanes existing. The results of the analysis will provide an indication of the expected operating conditions along the street segments and assess if the existing intersections and local streets in the study area can provide the necessary access to satisfactorily accommodate the design year traffic demands.

### **C. Level-of-Service Analysis**

The method of quantifying traffic congestion is to determine the existing and projected level-of-service (LOS) of a given section of roadway or intersection. Level-of-service is a qualitative measure describing operational conditions of a traffic stream as perceived by the motorist. Traffic conditions are described in terms of convenience, maneuverability, travel time, safety, and the frequency of interruptions. Six levels of service, A through F, are defined with LOS A representing uncongested conditions and LOS F representing very congested.

As a part of this study analysis of existing traffic operations of the intersections included in the study area will be made. This stage of analysis will utilize existing turning movement traffic volumes, lane configurations and existing traffic signal phasing and timing. The results of this analysis will provide an indication of existing traffic operations and thus provide a benchmark to compare projected traffic conditions. The existing capacity calculations will be performed for each the a.m. peak and the p.m. peak hour of traffic.

Additional analysis will be performed for projected traffic volumes to a designated future design year (year 2020) at each of the intersections. Capacity calculations will be performed for each the a.m. peak and the p.m. peak hour of traffic.

D. Analyze Existing Deficiencies/Needs

The results of existing and projected level-of-service analysis results will indicate deficiencies and needs at the intersections and will indicate the traffic operating conditions that occur currently and can be expected at the selected future year. Analysis findings will consider and/or be consistent with local and regional land use and transportation plans, including coordination and consistency with currently planned improvements, as appropriate.

E. Develop Alternative Networks

Roadway network improvements will be analyzed to address the traffic deficiencies and needs identified in the previous tasks. Network alternatives will be identified for improving network continuity, functional classification, system relationships, thoroughfare spacing, and traffic circulation and access. Opportunities will be identified for adding additional lanes to upgrade existing streets and/or for developing new thoroughfare alignments to serve the identified traffic demand, relieve congestion, and improve access and circulation. Constraints to thoroughfare development will be identified, such as existing land uses, water bodies, floodplains, railroads, and other obstacles. A total of three alternatives will be developed for analysis and evaluation, including the existing and committed (E+C) network and two future alternative networks for short-range (2005) and long-range (2020) roadway system improvements.

F. Analyze/Evaluate Alternative Scenarios

Additional traffic analyses will be conducted for the E+C roadway network and two future roadway scenarios. These improvements will be evaluated using the traffic model and local knowledge of the roadway system. For the E+C network analysis, the existing traffic analysis will be modified to reflect the projected future traffic volumes and any planned/committed roadway improvements. Short-term improvements that were recommended as part of the existing traffic analysis will also be incorporated into the E+C network. The E+C network with future traffic volumes and planned improvements incorporated will be evaluated. Level-of-service will be determined for all study intersections. Deficiencies will be identified.

Two future improvement alternatives will be developed to address system deficiencies. Analyses will be conducted to evaluate the proposed improvement alternatives. Based on these analyses, recommendations will be made for short-term and long-term improvements.

AET will coordinate a second 2-hour meeting for the general public once the alternatives have been developed. This meeting will also consist of an open house forum at which AET will seek citizen input and support for the proposed alternatives. A summary of the meeting will also be provided.

#### G. Recommend Improvements

Recommended short-term and long-term improvements will be developed based on the findings of the previous tasks. Short-term improvements will include roadway or traffic control improvements that should be implemented in the next 1-5 years, are relatively low cost and free of major impediments to quick implementation. Long-term improvements will include other roadway improvements that should be implemented in the 5-20 year time frame. All recommendations shall be in accordance with the Federal Highway Administration (FHWA), Arkansas Highway and Transportation Department (AHTD), American Association of State Highway Transportation Officials (AASHTO) and other governing agencies.

#### H. Environmental Screening

Preliminary environmental screening of the transportation improvement plan will be performed to determine any major environmental issues that might represent a "fatal flaw" and prevent timely implementation of the recommended improvements. Existing information from available sources will be compiled and reviewed to identify environmental resources and characteristics of the study area. Potential environmental impacts of the recommended improvements will be considered in general terms to determine the likelihood of any issues or concerns that might require further detailed environmental analysis. The potential need for environmental surveys, assessments, or impact analysis will be noted. A preliminary environmental assessment, if needed, will be outlined for the recommended plan.

#### I. Evaluate/Consider Alternative Transportation Modes

Potential implications or enhancements for public transit, bicycles, and pedestrians will be considered in development of the transportation improvement plan. Any existing or planned/committed transit routes and facilities: bike routes, lanes, or trails, and pedestrian sidewalks will be identified in the study area. Opportunities for potential incorporation of transit, bicycle, and pedestrian improvements in the recommended transportation plan will be identified and described in general terms as to location and type of facility.

#### J. Costs Estimates

A preliminary cost estimate will be prepared for the recommended transportation improvement plan. Unit prices for various types of roadway improvements will be utilized based upon available cost data maintained by the AHTD and other sources. An allowance for design fees, contingencies, and R-O-W acquisition costs will be included. Cost estimates will be identified in current value dollars and by phase for projects included in the overall improvement plan.

#### K. Identify/Evaluate Potential Funding Sources

AET will review the potential sources for funding assistance through Federal Assistance including TEA-21 Re-authorization and other state and federal programs. Additionally, funding through State assistance by the AHTD and State Economic and Community Development Programs and local funding from MATA funds, City sales tax of ongoing streets and drainage, and State Turn-Back Funds will be considered.

L. Conduct Public Meeting

AET will coordinate a third two-hour meeting for the general public during the final stages of the plan development process. This meeting will consist of an open house forum of which AET will present an overview of the recommended draft transportation improvement plan and coordinate small group discussions intended to seek citizen input on the recommended improvements. The public will have an opportunity to voice their concerns. A summary of the meeting, including the comments identified by participants, will be provided.

AET will coordinate one (2) two-hour meeting for the Transportation Advisory Committee during the plan development process. These meetings will provide an updated status report, alternatives discussion, and opportunity for additional comments and recommendations. Feedback received from the committee will be considered in development of the recommended transportation plan.

**Phase V - Prepare Study Report**

Study findings, conclusions, and recommendations resulting from the previous tasks will be documented in a transportation plan report including appropriate text, tables, and figures. Data and methodology will be included in appendices, as appropriate. A draft study report will be prepared and submitted in five (5) copies for review and comment by the City. Following receipt of the City's review comments, the final study report will be prepared and submitted in fifteen (15) copies and one reproducible original. The final study report will also be provided in electronic format on CD.

**3. Subcontracting**

Subcontracting by AET of specified services provided herein shall be to Peters & Associates Engineers, Inc. and Cater+Burgess, Inc.

**4. Time of Beginning and Completion**

AET shall begin work under this Agreement within ten (10) days of notice to proceed. Expected delivery of Study Report is estimated at 300 calendar days.

**5. Compensation**

Payment for work effort will be based on actual work effort completed. Compensation for services will be detailed on monthly invoices. Total fee for contract is set as listed below.

**Total Fee:**

**\$ 225,000**



## **6. Changes**

The City of Jonesboro may at any time, by written order, make changes within the general scope of the contract in the work and services to be performed. If any such changes causes an increase or decrease in costs, or the time required, or performance of this contract, an equitable increase or decrease shall be made in the contract amount, including fee or time of required performance, or both, and the contract shall be modified in writing accordingly.

Changes, modifications of amendments in scope, price or fee to this contract shall not be allowed without a formal contract amendment approved by the Mayor or the City Council in advance of the change in scope, price or fees.

## **7. Postponement of Cancellation of the Contract**

It is understood that the City of Jonesboro will have the right to suspend or cancel the work at any time.

A. Postponement – should The City of Jonesboro, for any reason whatsoever, decide to postpone the work at any time, The City of Jonesboro will notify AET, who will immediately suspend work. Should the City of Jonesboro decide during such suspension not to resume the work, or should such suspension not be terminated within a year, the work shall be canceled as hereinafter provided.

B. Cancellation – Should The City of Jonesboro, for any reason whatsoever, decide to cancel or to terminate the use of AET's services, The City of Jonesboro will give written notice thereof to AET, who will immediately terminate the work. If The City of Jonesboro so elects, AET may be instructed to bring reasonable stage of completion to those items whose value would otherwise be lost. AET shall turn over all data, charts, survey notes, figures, drawings and other records or information collected or produced hereunder whether partial or complete. Upon such termination of AET services, AET shall be paid on a proportional amount of the total fees, less prior partial payments, based on the ratio of work done to the total amount of work to be performed.

## **8. Additional Services**

Additional services requested by the Mayor or the City Council not identified in the scope of work will be performed in accordance with the hourly rate schedule or an amendment to the contract can be executed for an amount agreeable to both parties.

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**Standard Fee Schedule  
For Engineering/Surveying Services**

Principal	\$ 150.00/hr
Project Manager	\$ 135.00/hr
Senior Engineer	\$ 105.00/hr
Design Engineer	\$ 90.00/hr
Surveyor	\$ 75.00/hr
Senior Technician	\$ 75.00/hr
Technician/CADD/GIS	\$ 51.00/hr
Administrative	\$ 39.00/hr
GPS Survey Crew	\$ 150.00/hr
4-Man Survey Crew	\$ 125.00/hr
3-Man Survey Crew	\$ 100.00/hr
2-Man Survey Crew	\$ 90.00/hr

These rates include all direct and indirect payroll cost, overhead, and profit. Other direct expenses not included in the above rates, such as printing, reproduction, transportation, per-diem and lodging, etc. will be invoiced at actual cost.

In Witness Whereof, the parties hereto have made and executed this Agreement as of the day and year first above written.

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Associated Engineering & Testing, LLC  
Kenneth L. Scrape, Managing Partner