Congestion Mgmt - Kinley Horn

CONTRACT NO: 2000286
PROJECT NO: CM-NHE-7900(28)
LP PROJECT NO: 2318

This Agreement is made and entered into on this 1st day of November, 20 01, by and between the State of Tennessee, acting through its Department of Transportation, hereinafter "Department," and Shelby County, hereinafter "Local Government," for the purpose of providing for a Shelby County Congestion Management program to install video detection, traffic signals, emergency preemption devices, and intersection improvements for the amounts and activities described in Attachment "A" labeled "Funding", attached hereto and made a part hereof. The terms of said attachments are hereby made a part of this Agreement to the same extent as if set herein verbatim.

The Parties agree that the Project will be implemented in accordance with the following understandings, requirements, conditions and limitations:

1. The Transportation Improvement Program (TIP) cost and funding data for the Project to be managed by the Local Government, is set out in item 2 of Attachment "A" attached and incorporated into this Agreement.

2. The Local Government shall be reimbursed for allowable costs incurred in the performance of work in an amount not to exceed the TIP cost.

3. All phases of the Project will be managed by the Local Government in accordance with the scope of work attached hereto as Attachment "B".

4. The employment of consultants shall be based upon the selection process that is attached, made a part hereof and identified as Attachment "C".

5. The Local Government agrees to prepare quarterly progress reports which shall be transmitted to the Department within thirty (30) days following the end of each quarter. The progress reports shall describe specific Project accomplishments. A Project accomplishments report shall be prepared and transmitted within sixty (60) days following the conclusion of the Project.

STANDARD TERMS

1. The Local Government shall submit invoices, in a form acceptable to the Department with all necessary supporting documentation, prior to any payment of allowable costs. Such invoices shall be submitted no more often than monthly and indicate at a minimum the amount charged for the period invoiced, the amount charged to date, the total amounts charged under this Contract for the period invoiced and the total amount charged to date. Each invoice shall be accompanied by proof of payment in the form of a canceled check or other means acceptable to both parties hereto.

2. The payment of an invoice by the Department shall not prejudice the Department's right to object to or question any invoice or

matter in relation thereto. Such payment by the Department shall neither be construed as acceptable of any part of the work or service provided nor as an approval of any of the costs invoiced therein. The Local Government's invoice shall be subject to reduction for amounts included in any invoice or payment theretofore made which are determined by the Department, on the basis of audits conducted in accordance with the terms of this Contract, not to constitute allowable costs. Any payment shall be reduced for overpayments, or increased for under-payments on subsequent invoices.

3. Should a dispute arise concerning payments due and owing to the Local Government under this Contract, the Department reserves the right to withhold said disputed amounts pending final resolution of the dispute.

4. The Department is not bound by this Contract until it is approved by the appropriate Department officials as indicated on the signature page of this Contract.

5. This Contract may be modified only by a written amendment which has been executed and approved by the appropriate parties as indicated on the signature page of this Contract.

6. The Department may terminate the Contract by giving the Local Government at least ninety (90) days notice before the effective termination date. The Local Government shall be entitled to receive equitable compensation for satisfactory authorized services completed as of termination date.

7. The Local Government agrees to comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d, et seq.), and the Department of Transportation Implementing Regulations (49 CFR Part 21).

8. It is the policy of the Department that minority business enterprises (MBEs) as defined in 49 CFR Part 23 have the maximum opportunity to participate in the performance of subcontracts financed with Federal funds. Consequently, the MBE requirements of 49 CFR Part 23 apply to this Contract. The Local Government agrees to ensure that such MBEs have the maximum opportunity to participate in the performance of subcontracts financed in whole or in part with Federal funds under this Contract. In this regard, the Local Government shall take all necessary and reasonable steps in accordance with 49 CFR Part 23 to ensure that MBEs have the maximum opportunity to compete for and perform subcontracts.

9. If the Local Government fails to properly perform its obligations under this Contract or violates any terms of this Contract, the Department shall have the right to immediately terminate the Contract and withhold payments in excess of fair compensation for completed services. The Local Government shall not be relieved of liability to the Department for damages sustained by virtue of any breach of this Contract by the Local Government.

10. The Local Government understands that if there is a determination by the Federal Highway Administration that part or all of the sums of money paid to the Local Government are ineligible for federal funds participation because of the failure to the Local Government to adhere to federal law and regulations, the Local Government will be obligated to pay the Department the sum of money declared ineligible by the Federal Highway Administration.

11. The Local Government agrees to comply with all applicable federal and state laws and regulations in the performance of its duties under this agreement. The parties hereby agree that failure of the Local

Government to comply with this provision shall constitute a material breach of this agreement and subject the Local Government to the repayment of all damages suffered by the State and or the Tennessee Department of Transportation as a result of said breach.

12. The Local Government agrees that when the construction phase is completed, it will provide the Department with a written certification that the Project was completed in accordance with the terms of this Contract.

13. The Local Government shall be solely responsible for and pay all costs associated with maintenance and operation of the project, including maintenance and operation of all electrically operated devices together with their related equipment, wiring and other necessary appurtenances, and the Local Government shall furnish electrical current to all such devices which may be installed as part of the Project.

14. Records of costs shall be kept by the Local Government and shall be available for inspection and copying by the Department during normal business hours for a period of not less than three years following the completion or termination of the Project.

15. The Local Government understands that the construction phase of the Project will be commenced immediately following the completion of all of its applicable responsibilities in accordance with a schedule that will provide for at least fifty percent completion of the construction phase with a reasonable period of time as defined by the Department thereafter continued without interruption until completed in accordance with the provisions of Attachment "B". The failure of the Local Government to follow the schedule for the construction phase will be construed as a breach of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their respective authorized officials.

SHELBY COUNTY

By: _____
Mayor

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

By: _____
J. Bruce Saltsman, Sr.
Commissioner

APPROVED AS TO FORM AND LEGALITY

By: _____
Attorney

APPROVED AS TO FORM AND LEGALITY

By: _____
Mary G. Moody
General Counsel

CERTIFIED FOR THE AVAILABILITY OF FUNDING

By: _____
Janice Marston
Director of Finance

ATTACHMENT "A'

FUNDING

CONTRACT NO: 2000286

LP PROJECT NO: 2318

1. **PROJECT DESCRIPTION:**

Shelby County Congestion Management Program – Video Detection, Traffic Signals, Emergency Preemption Devices, and Intersection Improvements.

2. **IMPLEMENTATION:**

Preliminary Engineering: $1,400,000.00

Construction: $6,200,000.00

3. **FUNDING DATA:**

(a) One Hundred Percent (100%) of the TIP cost will be paid from 23 U.SC.A., Section 149, Congestion Mitigation and Air Quality Improvement Program funds allocated or subject to allocation to the Local Government

(b) One Hundred Percent (100%) of the actual cost will be paid from Local Government funds following expenditure of the TIP cost or if the use of said federal funds is ruled ineligible at any time by the Federal Highway Administration.

Attachment "B"

Shelby County Congestion Management Program

In order to reduce congestion and improve air quality, it is important to keep traffic moving efficiently. A significant portion of trip delays are the result of traffic congestion at signalized and unsignalized intersections. These congested intersections create "hot spots" of higher vehicle emissions which degrade air quality and impact quality of life. The development of a Congestion Management Program will assist Shelby County, the Town of Collierville, the City of Germantown and the City of Bartlett identify intersections that are not operating at their peak efficiency and will assist these agencies with the development and implementation of measures that reduce traffic congestion, improve mobility, and improve air quality in their communities.

In the newly developing areas of Shelby County traffic patterns are continuously changing. This creates an environment in which it is difficult to satisfy traffic demands without constant attention to traffic operations. The Congestion Management Program will allow system-wide analysis and monitoring of individual signalized and unsignalized intersections in order to identify congested areas and implement needed improvements.

The Congestion Management Program will include many elements to improve the flow of traffic within these jurisdictions. Among these elements will be projects to improve the efficiency of traffic flow at existing signalized intersections through signal timing and phasing adjustments and through the coordination of adjacent signalized intersections. Existing unsignalized intersections will be evaluated to determine if the installation of a warranted traffic signal would improve operational efficiency. The method of vehicle detection at signalized intersections will be changed in order to provide a more reliable method of detection and one that does not require multiple lane closures to replace the detection devices. The use of emergency vehicle preemption devices will be expanded in jurisdictions that currently use these devices and where deemed appropriate to improve traffic flow. An air quality analysis will be conducted to demonstrate which projects will provide positive or neutral air quality impacts and to assist in ranking projects for implementation. The elements of the program are further described below.

Unsignalized Intersection Operation Improvements

The Congestion Management Program will include the investigation of existing unsignalized intersections to determine if changes to the operation of the intersection would result in improved

traffic flow and reduced congestion. The improvements at these intersections could include the conversion of multi-way stops to two-way or one-way stops or the conversion of multi-way stops to traffic signals.

Within the jurisdictions participating in the Congestion Management Program, there are stop-controlled intersections that may meet the warrants for the installation of a traffic signal. Intersection traffic signal warrant analyses and air quality analyses will be performed at these intersections, as they are identified, in order to determine if they meet the warrants for the installation of a traffic signal and to determine if the installation of a traffic signal will improve the air quality. At the locations where both conditions are met, plans will be prepared for the installation of these signals, and the new signals will be constructed.

The local agencies would identify the unsignalized intersections that need evaluations through various means, such as field observations, citizen complaints, or other anecdotal information. The unsignalized intersection analyses would include obtaining the appropriate intersection turning movement counts, performing intersection operational analyses, conducting traffic signal warrants analyses, conducting multi-way stop warrants analyses, conducting air quality analyses and the implementation of the recommended improvements.. Before-after air quality analyses will be conducted to determine the reduction in emissions as result of the recommended intersection improvements. The focus of these unsignalized intersection projects would be to improve air quality through improving traffic operations and reducing congestion.

Signalized Intersection Operational Improvements

This Congestion Management Program will include a program to conduct traffic counts at all signalized intersections within the subject jurisdictions, analyze the operations of these intersections and develop improvements, as required, that improve the efficiency of traffic operations of these intersections. Typically, the improvements at these intersections will involve the implementation of signal timing or phasing changes that reflect the changes in traffic patterns that occur as development occurs. The Congestion Management Program will also include the implementation of signalized intersection improvements and the fine-tuning of the signal timing improvements in the field. Before-after air quality analyses will be performed to quantify the reduction of emissions resulting from the signalized intersection improvements.

Signal System Improvements and Expansion

In certain instances, individual signalized intersections operating in isolated modes should be operating in coordination with the adjacent signalized intersections in order to improve the overall traffic operations. In other instances, signalized intersections that are part of a coordinated signal system may function at less than peak efficiency due to out-dated signal or system timings. Both instances can result in traffic congestion along arterial roadways. The Congestion Management Program will identify the need and develop plans to improve the operations of the existing signal systems by incorporating more isolated intersections into signal systems as needed and improving the timing plans of existing signal systems. The results of these signal system improvement projects will be to improve the flow of traffic, reduce congestion and improve air quality.

Traffic Signal Detection Device Upgrade

Failed inductive loop detectors are major causes of delays that are experienced at signalized intersections. These detectors are typically wire loop detectors that are installed in the asphalt pavement by saw cutting a slot in the pavement, inserting the wire and sealing the cut with an epoxy based sealant. Because the asphalt pavement is flexible, the wire loops are subjected to repeated cycles of bending that cause the wire to break. Once the loop detector breaks, the detection circuit can not be completed and the detector will not issue notice to the controller of a waiting vehicle (otherwise known as a call). When the call is not issued, the controller will function as though there are no vehicles waiting in that lane and the controller will not issue a green cycle for that direction. Once complaints are received or the malfunction is observed, the typical maintenance response is to modify the function of the controller to automatically respond as though there is always a vehicle waiting in that lane. This is known as putting the controller on "recall." Inefficiency and delays result due to the controller allotting time to that phase even though there may not be any vehicles waiting for that phase. This typically results in delays to the other intersection approaches that could be avoided with improved vehicle detection that is not susceptible to damage from pavement degradation.

Further, when the broken loop is repaired, it is required to block that lane of traffic at the intersection to re-cut a new loop slot, install the loop wire and sealant and extend the loop lead-in wires to the nearest pull box. On minor street approaches, this activity is not typically very

disruptive to traffic flow. However, on many of the major street approaches in these jurisdictions, the reduction of the available lanes by one lane will result in significant delays and congestion on the major street approachs.

One solution to this problem is to replace the inductive loop detectors with a detector that is not placed in the pavement and, thereby, not subjected to the cyclical fatigue experienced by wire loop detectors. Optical vehicle detection units, for example, are typically mounted on signal poles or on the cantilevered signal head support arms. Optical detection units use video technology to detect the vehicles within certain zones. In addition, optical detectors can be installed, replaced, or adjusted without obstructing traffic lanes. The optical detection devices are not subject to frequent malfunctions that are experienced by traditional inductive loop detectors. Therefore, they can significantly reduce the opportunity for traffic delays and inefficient traffic operations. The Congestion Management Program will include the replacement of existing in-pavement inductive loop detectors with more reliable optical detection units at all signalized intersections within the project area.

Installation of Emergency Preemption Devices

Some of the communities in Shelby County presently make use of the Opticom emergency vehicle preemption devices. These devices allow emergency vehicles to move through traffic signals more safely by causing the traffic signal phasing to change to stop cross traffic. These devices also allow the emergency vehicles to move through the signalized intersections faster. This not only allows the emergency vehicles to respond to the emergencies quicker. It also reduces the amount of time that the operations at the signalized intersections is disrupted, thereby reducing congestion and improving air quality.

As part of this project, Opticom emergency preemption devices will be installed at all signalized intersections within the jurisdictions that make use of these devices. These installations will be coordinated with the installation of the video detection devices in order to minimize design and construction costs.

Air Quality Analysis of Proposed Improvements

One of the requirements for funding projects under the Congestion Mitigation/ Air Quality Improvement (CMAQ) program is to demonstrate that the proposed project will improve or have a neutral impact on air quality. The Congestion Management Program will provide the appropriate air quality analyses to meet this requirement.

Some of the projects that will be proposed will not create quantifiable criteria by which to judge air quality improvements. These projects are more appropriately assessed by a qualitative analysis. Typical projects for which a qualitative air quality analysis will be conducted are the installation of the video detection devices and the emergency preemption devices.

Other projects provide measurable means to determine the impact they will have on air quality. Projects such as the isolated intersection improvements, the signal system improvements and expansion, and the unsignalized intersection improvements can be evaluated based on the changes in emissions caused by reductions in traffic delay and congestion. For the purposes of conducting before-after air quality analyses, individual projects will be grouped for analysis. The level of improvement or degradation in air quality will be determined based on reductions or increases in intersection delays. Intersection delays will be determined for the existing and improved intersection conditions utilizing accepted methods, such as the Highway Capacity Manual methodology. Utilizing emission factors from the regional air quality model, the level of air quality improvement will be determined for each group of projects. This information will be summarized and documented in a report that will be provided to the Tennessee Department of Transportation.

Program Management

Part of this program will include developing a database of information to track roadway data and intersection performance data that will be used as a benchmark for future Congestion Management Program improvements. This database will include traffic counts, laneage information and current signal timing. The project will include a system to provide current traffic count data that will be used to re-evaluate the signal operations and to flag intersections as they become congested or need improvements.

The benefits of this program will be improved air quality through the implementation of traffic control measures that improve traffic flow and reduce delays. The following charts identify the signalized intersections within the jurisdictions participating in this program and the suggested frequency to obtain traffic counts and to analyze the intersection operations.

Shelby County Signalized Intersections

Number	Location	
S1	Holmes at Distriplex/ Tradeport	Annual
S2	Winchester at Forest Hill-Irene Road	Semi-Annual
S3	Winchester at Houston Levee	Semi-Annual
S4	Austin Peay at Old Brownsville	Annual
S5	Holmes at Hickory Hill	Annual
S6	Macon at Houston Levee	Semi-Annual
S7	Macon at Berryhill	Semi-Annual
S8	Reese at Appling	Annual
S9	Holmes at Riverdale	Semi-Annual
S10	Tuggle at Lamar	Semi-Annual
S11	Woodchase at Germantown Parkway	Annual
S12	Reese at Whitten	Semi-Annual
S13	Chimneyrock at Germantown Parkway	Semi-Annual
S14	Egypt Central at Singleton Parkway	Annual
S15	Shelby Drive at Old Germantown Road	Annual
S16	Shelby Drive at Hacks Cross Road	Semi-Annual
S17	Rockcreek Parkway at Germantown Parkway	Semi-Annual
S18	Nonconnah Parkway at Hacks Cross Road	Semi-Annual
S19	Nonconnah Parkway at Forrest Hill-Irene	Semi-Annual
S20	Navy Road at Bethuel Road	Annual
S21	Highway 70 at Germantown Road	Semi-Annual
S22	Highway 64 at Rockcreek Parkway	Semi-Annual
S23	Highway 64 at I-40 Ramps	Semi-Annual
S24	Highway 64 at Houston Levee/ Canada Road	Annual
S25	Highway 64 at Fletcher Trace	Annual
S26	Highway 64 at Davies Plantation Road	Semi-Annual

Shelby County Signalized Intersections (cont)

Number	Location	Count and Rate Time
S27	Holes at Lamar	Semi-Annual
S28	Fite Road at Raleigh-Millington Road	Annual
S29	Fite Road at Highway 51	Annual
S30	Dexter Road at Germantown Parkway	Semi-Annual
S31	Cordova Road at Germantown Parkway	Semi-Annual
S32	Highway 64 at Collierville –Arlington Road	Annual
S33	Club Parkway at Germantown Parkway	Annual
S34	Bonnie Lane at Germantown Parkway	Annual
S35	Holmes at Getwell	Semi-Annual
S36	Highway 64 at Berryhill Road	Annual
S37	Highway 78 at Davidson Road	Annual
S38	Lowrance Road at Hacks Cross Road	Annual

Town of Collierville Signalized Intersections

Number	Location	Count and Rate Time
C1	Poplar Avenue at Houston Levee Road	Semi-annual
C2	Winchester Boulevard at Houston Levee Road	Semi-Annual
C3	Frank Road at Houston Levee Road	Annual
C4	Dogwood Road at Houston Levee Road	Semi-Annual
C5	Nonconnah Parkway at Bailey Station Road	Semi-Annual
C6	FedEx East Campus Drive at Bailey Station	Annual
C7	Winchester Boulevard at Bailey Station Road	Semi-Annual
C8	Poplar Avenue at Bailey Station Road	Semi-Annual
C9	Poplar Avenue at Shea Road	Semi-Annual
C10	Poplar Avenue at Bray Station (Shilling Blvd)	Annual
C11	Poplar Avenue at Poplar View Parkway	Annual
C12	Poplar Avenue at Market Street	Annual
C13	Nonconnah Parkway at Byhalia Road	Semi-Annual
C14	Winchester Boulevard East at Byhalia Road	Semi-Annual
C15	Poplar Avenue at Byhalia Road	Semi-Annual

Town of Collierville Signalized Intersections (Cont.)

Number	Location	Count and Report Frequency
C16	Powell Road at Byhalia Road	Annual
C17	White Road at Byhalia Road	Annual
C18	Frank Road at Byhalia Road	Annual
C19	Shelton Road at Byhalia Road	Annual
C20	Poplar Avenue at US 72	Semi-Annual
C21	Center Street at US Highway 72	Semi-Annual
C22	Nonconnah Parkway at US Highway 72	Semi-Annual
C23	Poplar Avenue at McKie Road	Annual
C24	Poplar Avenue at Peterson Lake Road	Annual
C25	Poplar Avenue at Main Street	Annual

City of Germantown Signalized Intersections

Number	Location	Count and Report Frequency
G1	Poplar Avenue at Kirby Parkway	Semi-annual
G2	Poplar Avenue at Poplar Estates Parkway	Annual
G3	Poplar Avenue at Riverdale/ Rowan	Annual
G4	Poplar Avenue at West Street/ West Farmington	Semi-Annual
G5	Poplar Avenue at Germantown Road	Semi-Annual
G6	Poplar Avenue at Exeter	Annual
G7	Poplar Avenue at Kimbrough Road	Annual
G8	Poplar Avenue at Forrest Hill-Irene	Semi-Annual
G9	Poplar Avenue at Village Shops	Annual
G10	Poplar Avenue at Johnson Road	Annual
G11	Poplar Pike at Forrest Hill-Irene Road	Annual
G12	Poplar Pike at Hacks Cross Road	Annual
G13	C.D. Smith Road at Hacks Cross Road	Annual
G14	Poplar Pike at Germantown/ Arthur	Annual
G15	Poplar Pike at West/ Germantown	Annual
G16	Stout Road at Germantown	Annual
G17	Poplar Pike at West/ North Street	Semi-Annual

City of Germantown Signalized Intersections (Cont.)

Number	Location	Count Frequency
G18	West Farminton at Germantown Road	Semi-Annual
G19	Neshoba at Germantown Road	Annual
G20	Brierbrook at Germantown	Annual
G21	Wolf River Boulevard at Germantown	Semi-Annual
G22	Wolf River Boulevard at Riverdale	Annual
G23	Farmington at Exeter	Semi-Annual
G24	Farmington at Kimbrough	Annual
G25	Farmington at Brierbrook	Annual
G26	Johnson Road at Dogwood (Wolf River)	Semi-Annual
G27	Dogwood Road (Wolf River) at Dogwood Grove	Annual
G28	Kimbrough at Dogwood	Semi-Annual
G29	West Street at North Street	Semi-Annual

City of Bartlett Signalized Intersections

Number	Location	Count Frequency
B1	Stage Road at Shelby Street	Semi-annual
B2	Stage Road and Bartlett Boulevard	Semi-Annual
B3	Stage Road and Sycamore View/ Bartlett Blvd	Semi-Annual
B4	Stage Road and Kroger Driveway	Annual
B5	Stage Road and Elmore Park	Annual
B6	Stage Road and Alturia	Annual
B7	Stage Road and Kirby/ Whitten	Semi-Annual
B8	Stage Road and US Highway 70	Semi-Annual
B9	Elmore Road and Bartlett Boulevard	Annual
B10	MALCO Driveway and Bartlett Boulevard	Annual
B11	Yale Road and Bartlett Boulevard	Semi-Annual
B12	Yale Road and Alturia	Annual
B13	Yale Road and Kirby/ Whitten	Semi-Annual
B14	St. Elmo and Kirby/ Whitten	Annual

City of Bartlett Signalized Intersections (Cont.)

[illegible]	[illegible]	[illegible]
B15	US Highway 70 at Appling Road	Semi-Annual
B16	US Highway 70 at Kirby/ Whitten	Semi-Annual
B17	US Highway 70 at Memphis Arlington	Annual
B18	Ellis Road at Germantown Parkway	Annual
B19	Brother Boulevard at Germantown Parkway	Semi-Annual

Program Costs

The following program costs have been identified for each portion of the program. These estimates are for establishing funding limits only and should not be considered to be construction cost estimates.

Unsignalized Intersection Operational Improvements

Design and Analysis	$ 235,000
Construction	$2,000,000

Signalized Intersection Operational Improvements

Design and Analysis	$ 470,000
Construction	$1,050,000

Signal System Improvements and Expansion

Design and Analysis	$ 310,000
Construction	$1,050,000

Detection Device Upgrade

Design	$ 220,000
Construction	$2,250,000

Emergency Preemption Devices

Design	$ 15,000
Construction	$ 200,000

Shelby County Congestion Management Program

Description	Unit	Number per Intersection	Number of Intersections	Quantity	Unit Price	Amount
Construction Items						
[redacted]						
Opticom Detection Devices with cable - 1 per direction	each	4	25	100	650.00	65,000.00
Opticom Detector Phase Selector - 1 per intersection	each	1	25	25	2,400.00	60,000.00
Emergency Preemption Confirmation Devices - 1 per direction	each	4	25	100	250.00	25,000.00
Emergency Preemption Beacon - 1 per intersection	each	1	25	25	400.00	10,000.00
Emergency Preemption Emitters	each	1	25	25	1,500.00	37,500.00
					Sub-Total	197,500.00
Video Detection						
[redacted]	each	4	111	444	5,000.00	2,220,000.00
					Sub-Total	2,220,000.00
Signal System						
Fiber Optic Cable	LF	1500	111	166500	2.00	333,000.00
Fiber Optic OTR	each	1	111	111	650.00	72,150.00
Aerial Splice Enclosures	each	1	111	111	1,400.00	155,400.00
Master Controller	each	0.08	111	9.25	6,000.00	55,500.00
System Detectors	each	0.25	111	27.75	4,500.00	124,875.00
					Sub-Total	740,925.00
[redacted]	each	1	20	20	100,000.00	2,000,000.00
					Sub-Total	2,000,000.00
Signalized Intersection Operational Improvements						
Implementation of new timings and fine tuning	each	1	111	111	2,640.00	293,040.00
Minor Construction Improvements	each	1	25	25	30,000.00	750,000.00
					Sub-Total	1,043,040.00
Project Administration						
Coordination of Construction Activities, Submittal					180,000.00	180,000.00
Reviews, Preparation of Contract Reimbursement Documents					Sub-Total	180,000.00
					TOTAL - CONSTRUCTION ITEMS	6,381,465.00

Shelby County Congestion Management Program

Description	Unit	Number per Intersection	Number of Intersections	Quantity	Unit Price	Amount
Design Items						
Traffic Counts (AM, PM, Off Peak)						
	each	1	111	111	860.00	95,460.00
Operational Improvements to Signalized Intersections						
Analysis and Develop New Timings	each	1	111	111	1,820.00	202,020.00
Air Quality Analysis	each	1	111	111	290.00	32,190.00
Design of Construction Improvements	each	1	20	20	8,000.00	160,000.00
Operational Improvements to Unsignalized Intersections						
Traffic Counts (AM, PM, Off Peak)	each	1	20	20	860.00	17,200.00
Analysis and Recommendations	each	1	20	20	1,820.00	36,400.00
Air Quality Analysis	each	1	20	20	290.00	5,800.00
Design of Recommended Improvements	each	1	20	20	8,000.00	160,000.00
Design of Video Detection Installations						
	each	4	111	444	500.00	222,000.00
Design of Emergency Preemption Device Installations						
	each	4	25	100	150.00	15,000.00
Design of Coordinated Signal Systems						
Analysis and Develop New System Timings	each	1	111	111	1,500.00	166,500.00
Implimentation and Field Fine Tuning	each	1	111	111	1,760.00	195,360.00
Air Quality Analysis	each	1	111	111	290.00	32,190.00
Design of Construction Improvements	each	1	111	111	500.00	55,500.00
Design Administration						
Coordination of Design Documents with TDOT, Coordination of Reimbursable Documentation with TDOT					20,000.00	20,000.00
					TOTAL - DESIGN ITEMS	1,415,620.00
					TOTAL - DESIGN AND CONSTRUCTION	7,797,085.00
					USE	7,800,000.00

Shelby County Congestion Management Program

PHASE 1 DESIGN

Description	Unit	Number per Intersection	Number of Intersections	Quantity	Unit Price	Amount
Design Items						
Traffic Counts (AM, PM, Off Peak)	each	1	60	60	860.00	51,600.00
Operational Improvements to Signalized Intersections						
Analysis and Develop New Timings	each	1	60	60	1,820.00	109,200.00
Air Quality Analysis	each	1	60	60	290.00	17,400.00
Design of Construction Improvements	each	1	20	20	8,000.00	160,000.00
Operational Improvements to Unsignalized Intersections						
Traffic Counts (AM, PM, Off Peak)	each	1	15	15	860.00	12,900.00
Analysis and Recommendations	each	1	15	15	1,820.00	27,300.00
Air Quality Analysis	each	1	15	15	290.00	4,350.00
Design of Recommended Improvements	each	1	10	10	8,000.00	80,000.00
Design of Video Detection Installations	each	4	60	240	500.00	120,000.00
Design of Emergency Preemption Device Installations	each	4	25	100	150.00	15,000.00
Design of Coordinated Signal Systems						
Analysis and Develop New System Timings	each	1	60	60	1,500.00	90,000.00
Implimentation and Field Fine Tuning	each	1	0	0	1,760.00	0.00
Air Quality Analysis	each	1	60	60	290.00	17,400.00
Design of Construction Improvements	each	1	60	60	500.00	30,000.00
Design Administration						
Coordination of Design Documents with TDOT, Coordination of Reimbursable Documentation with TDOT					10,000.00	10,000.00
					TOTAL - DESIGN ITEMS	745,150.00

ATTACHMENT "C"
STANDARD PROCUREMENT POLICY FOR ENGINEERING AND DESIGN
AND
TECHNICAL SERVICES
THE STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

1. Purpose:

To prescribe the policy of the Tennessee Department of Transportation (TDOT) applicable to the retention of consultant services for architectural, engineering and technical services.

2. Application:

A. Engineering and Design Services:

Contracts for project management, construction management and inspection, feasibility studies, preliminary engineering, design engineering, surveying, mapping and architectural related services.

These may be for a project, task or service. They may cover emergency contracts and those calling for special expertise.

B. Technical services such as inspection of structural steel fabrication, drilling for subsurface data, inspection of welds on existing bridges, underwater inspection, etc.

C. Contracts for planning and research and safety related programs will be administered under the common rule, 49 CFR Part 18.

III. Definitions:

Project - Like highway work at a defined location or like phases of highway work at several locations.

IV. Policy and Procedure:

A. Determination of Need for Consultant Services

The TDOT is obligated with the responsibility of deciding the necessity of using outside consultant services. The three general conditions in determining the necessity and/or desirability of retaining a consultant are:

1. The magnitude of the work involved for the project as compared to available departmental manpower.

2. Complexity of the work involved as compared to available expertise within TDOT.

3. The time frame in which the work must be accomplished and the ability of TDOT to do the work and maintain its program on schedule.

B. Procedures:

1.Establishment of a Consultant Evaluation Committee

The TDOT will have a consultant evaluation committee composed of personnel from the TDOT Bureau requiring services as follows: the Executive Director, the Assistant Executive Directors and the Division Director(s) requiring the services. The Evaluation committee shall have the responsibility of determining the need for consultant services and submitting to the Commissioner of Transportation a recommended list of qualified firms.

2.Registration of Prequalified Consultants

The Department shall publish annually a solicitation advising that consultant services may be sought during the forth-coming twelve-month period for various disciplines of work therein the Department shall request that firms submit a completed Form DOT-CS-100 to indicate their interest in performing work and to secure pre-qualification status with the Department. The Department shall review each applicant firm's professional, technical and financial credentials from information provided on Form DOT-CS- 100 and complete a registry of successfully prequalified firms in the several professional disciplines this registry shall be supplemented throughout the year as other firms successfully meet the Department's pre-qualification requirements. Only those firms who have successfully met the following criteria shall be considered in the procurement processes:

a. Firms should be of a high ethical and professional standing, and they shall provide references from clients of recent performances of work of a similar character to the usual Departmental projects. Firms must comply with the provisions of T.C.A., Section 62-2-601.

b. Principals, project administrators, project managers or other key responsible members of the consultant firm shall be registered as professional practitioners as required in T.C.A., Title 62, Chapter 2, Part 1.

c. Principals and/or responsible professionals of the firm's staff must be experienced in the disciplines for which pre-qualification status is being sought.

d. There shall be an adequacy of both numbers and quality of other staff members to perform a majority of the phases of work in the disciplines for which pre-qualification status is being sought.

e. Firms should be of a sound financial standing and have the financial ability to undertake an assignment. The Department shall notify all applicants of the results of the review of their application for pre-qualification.

A firm's successful pre-qualification status shall remain in effect for a period of one year, plus a three-month grace period, beginning with the "condition at close of business" date shown on the financial statement thereafter, the firm must reapply for pre-qualification renewal. A new pre-qualification may be filed at any time.

3. Consultant Selection

Upon the determination of a need for a consultant for a specific project or projects, the Department shall seek letters of interest from prequalified firms by advertising through appropriate public media. The evaluation committee shall evaluate the current statements of qualification and performance data (either submitted with letters of interest or on file) for those submitting letters of interest and choose several firms who would make viable selection candidates.

The committee shall invite, from these firms, the submission of proposals (form DOT-CS-200). This invitation will include a scope of work, a list of evaluation factors and their relative importance, and method(s) of payment. The evaluation factors as a minimum shall be past experience in the required disciplines with TDOT and/or other clients, staffing available to perform the required services, demonstrated ability to meet schedules without compromising sound engineering practices, and time since last project with TDOT. The Committee shall take affirmative aggressive steps consistent with the Department's related goals to identify and give proper selection consideration for employment to Disadvantaged Business Enterprises professionally qualified in the disciplines required under the proposed work. The Committee shall evaluate the proposals received and recommend to the Commissioner a list of no fewer than three of the firms deemed to be most qualified to provide the services required. The commissioner shall rank the firms in order of preference based upon the criteria established. The Department will negotiate with the highest qualified firm. All considered firms who were unsuccessful in the selection process shall be so notified.

4. Negotiations

a. Determination of Contract Price (See Addendum 1)

Following a decision to use consultant services, the Evaluation Committee shall analyze the work to be undertaken and an estimated fixed price or cost reimbursable fee shall be determined base on: 1)relative difficulty of the proposed assignment or project, details required, and the period of performance, and 2) a comparison with the experience record of engineering costs for similar work performed both by TDOT personnel and previously negotiated consultant contracts. The estimated contract price will be documented for future use in the negotiation process.

b. Negotiation of Contract Use

The Director of the TDOT division responsible for the services to be acquired will negotiate with the selected firm. Said Director shall arrange a conference with the prospective consultant at which the parties must come to a mutual understanding of the scope of work and all technical and administrative requirements of the proposed undertaking. The Director shall invite the Certification Engineer or the Division Administrator of the Federal Highway Administration to negotiation conferences for the projects involving Federal-aid highway funds. The prospective consulting firm will be invited to submit a cost proposal for the project this cost proposal is to be broken down by the various items of work as requested and supported by estimated labor requirements. Instructions shall be given at the conference regarding the method of compensation and the documentation needed to justify the proposed compensation.

In evaluating the consultant's cost proposal(s), the Director shall judge the reasonableness of the proposed compensation and anticipated labor and equipment requirements by the following and other appropriate considerations:

(1) The proposed compensation should be comparable to that of other projects of similar nature, terrain, complexity, etc.

(2) The Director, as deemed appropriate, will assess the fairness of the proposed fee.

(3) The proposed compensation shall be studied for reasonableness and to assure sufficient compensation to cover the professional quality of the work items desired.

(4) The proposed compensation shall be subjected to a pre-award audit evaluation as required by 23 CFR Part 172. The resulting audit report shall be a part of the supporting documentation.

(5) The consultant's proposed compensations and labor estimates shall compare favorably with those originated independently by the Committee under Section IV(b) (4) (a).

If the consultant's first cost proposal is rejected by the Department, the negotiation parties shall hold a second conference to discuss those points of the cost proposal which are considered unsatisfactory. The consultant shall submit a second cost proposal based upon this second conference. If the Department rejects the consultant's second cost proposal, negotiations shall cease and commence with the second most qualified firm. If like negotiations are unsuccessful with the second most qualified firm, the Department will undertake negotiations with the third most qualified firm and others on the selected list in sequential order. Should negotiations fail with all of the selected firms, the Department may select additional firms in order of their competence and qualification and continue negotiations in accordance with this section until an agreement is reached. The Department may, at any time, in lieu of continuing negotiations, elect to redefine the scope of the project with the concurrence of the Commissioner and invite another group of consultants to submit proposals pursuant to Section IV(B) (3).

5. Small Purchases

When the contract cost of the services does not exceed $25,000, small purchase procedures may be used. Price quotations will be obtained from an adequate number of qualified sources with a minimum of two. Awards will be made to the responsible firm whose proposal is most advantageous to the program with price and other relevant factors considered.

C. <u>Other Engineering Services</u>

These procedures shall be used by the Department in those circumstances where there exists only one viable source for the desired services, when competition among available sources is inadequate, or when adherence to normal procedures will entail undue delays for projects requiring urgent completion. Upon determination of a need for this type service, TDOT shall request proposals from qualified firms for the accomplishment of the desired assignment. The request for proposal shall define the full scope of the desired services, together with minimum performance specifications and standards, the data, materials, and services to be provided the consultant by the Department, and the required assignment completion

F. Documentation of Selection, Negotiations and Monitoring Processes

The aforementioned processes for each consultant agreement shall be documented the Department shall retain a record of proposals received and the evaluation and selection of a consultant for each project for a period of three (3) years from completion of the project.

Addendum One

Effective August 9, 1996, the following limitations shall be observed with respect to consultant contracts, either where TDOT is one of the contracting parties or it has authorized another party to contract separately for consulting services. The following limitations shall be provided for in the contract:

OVERHEAD LIMITS

The overhead charge effective June 14, 1996, shall be the actual rate up to a maximum of 145% of the consultant's direct labor costs. Any Bonus, Employee Management Incentive Program, or any other type of payments to an Owner, Partner, Officer or Associate, other than salary, shall be considered as a distribution of profit and shall not be allowed in arriving at the overhead rate. Bonus paid to employees owning more than 2% of the out-standing stock shall be disallowed.

Supplements, work orders, addendums, etc to contracts dated prior to June 14, 1996, shall not exceed the overhead maximum rate of 135%.

Effective June 14, 1996, a fixed overhead rate approved by external audit will be stated in the basic contract. This fixed overhead rate will also remain in effect for supplements, work orders, addendums, etc for the life of the basic contract.

INDIRECT SALARY LIMITS

Indirect individual salaries, wages or any other type remuneration in excess of $75,000.00 per year shall be disallowed in the overhead computation.

TRAVEL

Travel and subsistence charges shall be in conformance with the State of Tennessee Comprehensive Travel Regulations.

Actual expenses, up to the commercial rate of company owned airplanes are allowable as a direct charge.

THE FOLLOWING ITEMS SHALL BE DEPARTMENTAL POLICY BUT ARE NOT NECESSARY ITEMS TO BE INCLUDED IN THE CONTRACT

NET FEE CALCULATION

_____The fee for profit is negotiable. The allowable fee shall be based on the total of direct labor and overhead by using the following formula:

Net Fee = 2.35 x Direct Salary x Allowed Net Fee Rate

Maximum allowed Net Fee Rate = 13%

The profit shall be the same regardless of the overhead rate. It is noted that 13% is the maximum profit rate. The rate should be negotiated depending on the type work, complexity, time restraints, etc. of the project.

STANDARD INVOICE

All invoices for contracts under this policy shall use a standard invoice (see Attachment A). Any deviation from this standard invoice shall be approved by the Division of Finance. All approved standard invoices shall be kept on file in the Division of Finance.

CONTRACT, RETAINAGE AND PROJECT CLOSING

_____The project manager is responsible for the timely closing of contracts and the related project(s). The project manager is responsible for keeping up with contract costs and knowing when a contract is complete. By letter to the consultant, the project manager shall affirm that the contract or work order has been satisfactorily completed and that a final retainage invoice should be submitted for payment by the consultant. If the consultant, for some reason, does not submit a final invoice within 90 days, the Division of Finance, by copy of the project manager's letter to the consultant, shall release all retainage on the contract or work order after the appropriate audits by the External Audit Section have been conducted.

AUDIT REQUIREMENTS

Consultant contracts and agreements are subject to pre-award, interim, final, post and overhead audits or reviews by the External Audit Section of the Division of Finance. The audits or reviews shall be performed under Government Auditing Standards and applicable administrative cost regulations. Any partial invoices submitted for payment under these contracts and agreements are subject to review by the External Audit Section of the Division of Finance.