

NORTH CAROLINA
CUMBERLAND COUNTY

**MUNICIPAL OPERATIONS – COMPUTER,
COMMUNICATIONS, EQUIPMENT, AND SYSTEM
OPERATIONS FOR COMPUTERIZED TRAFFIC SIGNAL
SYSTEM AGREEMENT
SCHEDULE D**

DATE: 6/13/2018

NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION

AND

WBS Element: 6.1026SM & 6.2026SM

CITY OF FAYETTEVILLE

THIS AGREEMENT is made and entered into on the last date executed below, by and between the North Carolina Department of Transportation, an agency of the State of North Carolina, hereinafter referred to as the "Department" and the City of Fayetteville hereinafter referred to as the "Municipality."

WITNESSETH:

WHEREAS, the provisions of the North Carolina General Statute (NCGS) §136-18 and §136-66.1 authorize the Municipality to contract with the Department for the installation, repair, operations and maintenance of highway signs and markings, electric traffic signals, and other traffic control devices on State Highway System streets within the Municipality; and,

WHEREAS, the Department and the Municipality have a mutual interest in the efficient and effective operation of traffic signals within the Municipality; and,

WHEREAS, the Department and the Municipality recognize that each party to this Agreement has an obligation and responsibility to provide for the safe, orderly, and efficient flow of traffic on their respective street systems; and,

WHEREAS, the Municipality finds that it is in the best public interest to enter into an Agreement with the Department to operate the computerized traffic signal system; and,

WHEREAS, the Department finds it desirable and advantageous to reimburse the Municipality for costs incurred, when the Municipality operates that portion of the computerized traffic signal system that is on the State Highway System within or near the Municipality;

NOW, THEREFORE, the Department and the Municipality do hereby agree as follows:

1. GENERAL PROVISIONS

COMPLIANCE WITH STATE/FEDERAL POLICY

The Municipality and/or its agent, including all contractors, subcontractors, or sub-recipients shall comply with all applicable Federal and State policies and procedures, stated both in this Agreement and in the Department's guidelines and procedures.

FAILURE TO COMPLY - CONSEQUENCES

Failure on the part of the Municipality to comply with any of the provisions of this Agreement will be grounds for the Department to terminate participation in the costs of the Project and, if applicable, seek repayment of any reimbursed funds.

2. SCOPE OF THE PROJECT

The Municipality shall operate the computerized traffic signal system as defined in the Appendices and as indicated hereinafter.

TIMING PLANS

- A. The Municipality shall be responsible for the evaluation and preparation of timing plans at all intersections in the traffic signal system. All traffic data needed for the evaluation and development of timing plans will be obtained by the Municipality whenever possible. The Municipality will notify the Department of any additional data that is required to evaluate and prepare the necessary timing plans. The Department shall, upon request, make available to the Municipality all current traffic count data for the existing signals.
- B. The timing plans affecting intersections on the State Highway System, utilized in system operation, will be subject to the approval of the Department and will reflect the needs of traffic on both the State Highway System and the Municipality's System. In the event the Department and the Municipality cannot agree on the selection of a given timing plan, the decision of the Department will be final.

ONGOING OPERATION OF THE SIGNAL SYSTEM

- C. The Municipality shall not install any traffic control devices, nor make any traffic signal phasing changes, on any State Highway System street without the prior approval of the Department, pursuant to NCGS §20-169.

- D. The Municipality shall operate the signal system in accordance with North Carolina General Statutes, the Department's current policies and guidelines as included in the Appendices, and all local codes and ordinances. If, in the opinion of the Department, the Municipality does not operate the signal system in accordance with the specified criteria, the Department shall have the right to enter into a separate operational agreement with a private contractor and deduct these costs from the Department's pro-rata share under this Agreement, or from the funds allocated under NCGS §136-41.1.
- E. The Department shall review and concur with any contract entered into by the Municipality for the operation of any item(s).
- Any contract entered into with another party to perform work associated with the requirements of this Agreement shall contain appropriate provisions regarding the utilization of Minority Business Enterprises/Women Business Enterprises (MBE/WBE), or as required and defined in NCGS 143-128.2 – 128-4 and the North Carolina Administrative Code. These provisions are incorporated into this Agreement by reference <https://connect.ncdot.gov/municipalities/Pages/Bid-Proposals-for-LGA.aspx>.
 - The Municipality shall not advertise nor enter into a contract for services performed as part of this Agreement, unless the Department provides written approval of the advertisement or the contents of the contract.
 - If the Municipality fails to comply with these requirements, the Department will withhold funding until these requirements are met.
- F. The Municipality agrees to an annual audit of the performance of intersection equipment and systems. The audit is to be performed by the Department and the Municipality.

3. TIME FRAME

This agreement shall be for the current state fiscal year, beginning July 1, 2018 and ending June 30, 2019. At the end of the state fiscal year, the provision of services and quality of results may be reviewed by the Department and Municipality. The Agreement may be extended for additional fiscal years, contingent upon the availability of NCDOT maintenance funds by the General Assembly. Extensions may be made in one (1) year increments, incorporating any mutually agreed upon adjustments, up to a total of five (5) years with the end of the final fiscal year of service being June 30, 2024. On behalf of the Municipality, extensions may be authorized and executed by the Town/City Manager and/or Mayor without further resolution of the Town/City Council. The agreement may be terminated by either party upon a thirty (30) day written notice.

- A. Upon termination of each year of service, and in connection with each extension of this Agreement, the Municipality may request an adjustment of the annual rates based on actual cost records for the prior years. This request must indicate the new rate for each Schedule D item. Each rate must be verifiable by time sheets, salary rates, materials, equipment, and other qualifying costs in conformance with the standards of allowable of costs set forth in the Office of Management and Budget (OMB) Circular A-87. This shall be actual cost incurred with the exception of equipment owned by the Municipality. Reimbursement for the rates of equipment owned by the Municipality cannot exceed the Department's rates in effect for the time period in which the work is performed.
- B. The cost records may be audited by the Department to determine any adjustments or revisions in the new rates.

4. FUNDING

The eligible costs of this Project will be reimbursed from State funding.

5. REIMBURSEMENT

The Department shall reimburse the Municipality quarterly, based on an annual amount, for the operation of the computerized traffic signal system as included below:

ELIGIBLE COSTS

- A. The reimbursement rates in this Agreement represent the Department's pro-rata share of the operational cost, which is based on the ratio of the number of State System intersections to the total number of intersections in the computerized traffic signal system. The Municipality shall maintain a current inventory list of all traffic signals within the system, and classify as city- or state-owned. The current inventory list, as included in the Appendices of this Agreement, will be used to determine the Department's pro-rata share.
- B. The Department shall reimburse the Municipality based on the annual operational amount of the computerized traffic signal system as included in the Appendices of this Agreement. This total amount includes the Department's pro-rata share of cost, as included in Provision 5A, for the salary, payroll additives of a System Operations Manager(s), Systems Operations Engineer(s) Traffic Signals System Specialist(s), or equivalent. These positions, at a minimum, shall exhibit the qualifications and perform the duties as included in the Appendices. The cost of the System Operations Manager(s), Systems Operations Engineer(s) Traffic Signals System Specialist(s), or equivalent, shall be based on the pro-rata share of time dedicated to the operation of the system.

- C. The Department shall reimburse the Municipality for operation of the Central Computer and Associated Hardware, CCTV Camera System, Communications Infrastructure, system detectors and other associated central and system field equipment. The Municipality shall be responsible for providing all needed replacement parts and equipment. Under this Agreement, the Department will reimburse the Municipality for its pro-rata share of the replacement or repair costs necessary for maintaining operability and any equipment included herein.
- D. The Municipality will not receive an annual reimbursement for fiber optic communications cable and CCTV cameras. The Department will reimburse the Municipality its pro-rata share of the actual costs for the emergency restoration of fiber optic communications and CCTV cameras. This cost shall include: fiber optic cable, interconnect centers, splice trays, fusion splicing, transceivers, Ethernet switches, labor, etc.
- E. Said reimbursement shall be limited to operational costs, which would include tasks associated with insuring the continuous, safe and efficient operation of traffic signals, traffic signal systems, and control facilities. Examples include, but are not limited to, emergency repairs to system components, periodic evaluation and adjustment to operational timing parameters, computer system and software upgrades, operational upgrades to maintain or improve safety or efficiency, etc.
- F. The Department will not reimburse operational costs for activities that do not have a direct and immediate effect on the continuous, safe and efficient operation of traffic signals, traffic signal systems, and control facilities including, but not limited to, painting of poles and signal cabinets, vegetation control adjacent to facilities, interior and exterior care of traffic control centers and parking areas, furniture for traffic control centers, etc.
- G. The Municipality agrees that it shall bear all costs for which it is unable to substantiate actual costs.
- H. Any costs incurred by the Municipality prior to written notification by the Department to proceed with the work shall not be eligible for reimbursement.
- I. The Department will reimburse the Municipality for its pro-rata share, as specified in the Appendices, for any Signal Systems operational contract in which it concurs. The Department shall have access to the contractor's records and documentation for audit, which pertains to any rates billed to the Municipality for the operation of those items for a period of five (5) years from the date of the final payment made under this agreement.

- J. Equipment secured as a non-participating item by the Department (100% Municipality costs) will continue as non-participating items with respect to operations. The Department's Division Engineer will provide the necessary documentation for non-participating items.

PROCESS

- K. The Municipality shall submit a quarterly itemized invoice including the certified status report to the Department for said costs no later than three (3) months after the scheduled quarterly invoicing date. This invoice will reflect the balance between the quarterly payments issued by the Department and the total amount not to exceed \$150,000.00, unless additional reimbursements are approved by the Department. All final invoices must be submitted within one (1) year after the work is performed or said work will be considered non-billable and will not be paid for by the Department. The Department, at its option, may elect to increase the reimbursement rates up to three percent (3%) each year in consideration of inflation rates and cost increases, subject to the availability of funds and the performance of the Municipality.
- L. The Department shall reimburse the Municipality upon approval by the Department's Division Engineer and the Fiscal Management Section.

6. FORCE ACCOUNT

Work performed by the Municipality's own forces is considered force account work. Force account work is only allowed when 1) there is a finding of cost effectiveness for the work to be performed by some method other than contract awarded by competitive bidding process, and 2) the force account work is in compliance with NC General Statute 143-135, found at www.ncleg.net/gascripts/Statutes/Statutes.asp. Written approval from the Division Engineer is required prior to the use of force account by the Municipality. Said invoices for force account work shall show a summary of labor, labor additives, equipment, materials and other qualifying costs in conformance with the standards for allowable costs set forth in Office of Management and Budget (OMB) Circular A-87 (http://www.whitehouse.gov/omb/circulars_a087_2004/). Reimbursement shall be based on actual cost incurred with the exception of equipment owned by the Municipality or its Project partners. Reimbursement rates for equipment owned by the Municipality or its Project partners cannot exceed the Department's rates in effect for the time period in which the work is performed, nor the maximum amount included in Appendix VI.

EMERGENCY WORK

Under current Department policy, if force account work is necessary and performed by the Municipality during emergency occurrences or occurrences that endanger public safety,

additional information shall be submitted to document the emergency situation, actions taken during the occurrence and the resolution with each quarterly invoice. Approval must be obtained from the Department Division Engineer before reimbursement is made.

7. RECORDS AND REPORTS

- A. The Municipality shall furnish the Department's Division Engineer a certified quarterly status report that details the operation of the signal system. The status report shall be certified in writing by the Systems Operations Engineer and shall indicate intersection failures, local and system detector failures, the percentage of time the computer system was off-line, the repairs that were made and the dates of said repairs/replacements. The quarterly report shall also identify any new/deleted intersections in the traffic signal system and all traffic signal timing optimization performed. The Department's Division Engineer will provide detailed guidance and reporting forms for the Municipality.
- B. In accordance with NCGS §159-34, the Municipality shall arrange for an independent financial and compliance audit of its fiscal operations. The Municipality shall furnish the Department with a copy of the independent audit report within thirty (30) days of completion of the report, but not later than nine (9) months after the Municipality fiscal year ends.
- C. The Municipality shall keep and maintain all books, documents, papers, accounting records, other such cost records and supporting documentation and evidence as may be appropriate to substantiate costs incurred under this Agreement. Further, the Municipality shall make such materials available at its office at all reasonable times during the Agreement period, and for three (3) years from the date of the final payment made under this agreement, for inspection and audit by the Department's Division Engineer and Financial Management Division and FHWA.

8. ADDITIONAL PROVISIONS

- A. This Agreement does not transfer legal control of, or responsibility, or legal liability for the State Highway System roads described herein to the Municipality, nor does it prohibit the Department from taking any action or undertaking any responsibilities with regard to such roads. This Agreement is solely for the benefit of the Municipality and the Department and not for the benefit of any other persons including, but not limited to, members of the public or users of the State Highway System roads, and no third party rights are created, or intended to be created, by this Agreement.

- B. The Municipality shall comply with Title VI of the Civil Rights Act of 1964, (Title 49 CFR, Subtitle A, Part 21). Title VI prohibits discrimination on the basis of race, color, national origin, disability, gender, and age in all programs or activities of any recipient of Federal assistance.
- C. It is the policy of the Department not to enter into any agreement with another party that has been debarred by any government agency (Federal or State). The Municipality certifies, by signature of this agreement, that neither it nor its agents or contractors are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal or State Department or Agency.
- D. The Municipality shall certify to the Department compliance with all applicable Federal and State laws and regulations and ordinances and shall indemnify the Department against any fines, assessments or other penalties resulting from noncompliance by any entity performing work under contract with the Municipality.
- E. The Municipality is solely responsible for all agreements, contracts, and work orders entered into or issued by the Municipality for this Project. The Department shall not be held liable by the Municipality for any expenses or obligations incurred for the Project except those specifically eligible for the funds and obligations as approved by the Department under the terms of this Agreement. The Department shall not reimburse the Municipality any costs that exceed the total funding at any time.
- F. The Municipality will indemnify and hold harmless the Department, FHWA, and the State of North Carolina, their respective officers, directors, principals, employees, agents, successors, and assigns from and against any and all claims for damage and/or liability in connection with the project activities performed pursuant to this Agreement including construction of the Project. The Department shall not be responsible for any damages or claims for damages, which may be initiated by third parties.
- G. The Department must approve any assignment or transfer of the responsibilities of the Municipality set forth in this Agreement to other parties or entities.
- H. By Executive Order 24, issued by Governor Perdue, and N.C. G.S. §133-32, it is unlawful for any vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, or vendor), to make gifts or to give favors to any State employee of the Governor's Cabinet Agencies (i.e., Administration, Commerce, Environmental Quality, Health and Human Services, Information Technology, Military and Veterans Affairs, Natural and Cultural Resources, Public Safety, Revenue, Transportation, and the Office of the Governor).

- I. This Agreement contains the entire agreement between the parties and there are no understandings or agreements, verbal or otherwise, regarding this Agreement except as expressly set forth herein.
- J. The parties hereby acknowledge that the individual executing the Agreement on their behalf is authorized to execute this Agreement on their behalf and to bind the respective entities to the terms contained herein and that he has read this Agreement, conferred with his attorney, and fully understands its contents.

IN WITNESS WHEREOF, this Agreement has been executed by the Department and the Municipality by authority duly given.

ATTEST:

CITY OF FAYETTEVILLE

BY: _____

BY: _____

DATE: _____

N.C.G.S. § 133-32 and Executive Order 24 prohibit the offer to, or acceptance by, any State Employee of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of any response in this procurement, you attest, for your entire organization and its employees or agents, that you are not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

Approved by the City of Fayetteville as attested to by the signature of _____

Clerk of the _____ (governing body) on _____

This Agreement has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

(SEAL)

BY: _____
(FINANCE OFFICER)

Remittance Address:

City of Fayetteville

DEPARTMENT OF TRANSPORTATION

BY: _____
(CHIEF ENGINEER)

DATE: _____

PRESENTED TO BOARD OF TRANSPORTATION ITEM O: _____

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

CITY OF FAYETTEVILLE

Traffic Signal System Operations

NOTE: The Department requires the Municipality to maintain a Level of Service "C", or "good", in order to provide reimbursement. If the operation falls below a Level of Service "C", or "good", then the Department may withhold reimbursement under this Agreement. If the Municipality operates at a higher level of service, the Department will not reimburse these costs.

Levels of Service

Level-of-service "A"

1. All of the signalized intersections in the Municipality's jurisdiction are monitored by the system. All of the signalized intersections are actively controlled for at least some periods of the day (e.g. timing plans are developed and implemented).
2. All timing plans and day plans are evaluated on intervals of no greater than **six months**. On corridors with a significant annual growth in traffic volume (> 5.0%), new timing plans are identified **annually**. Required new plans are developed and implemented within **three months** of identification.
3. The Municipality has an active traffic data collection program that includes turning movement counts at all signalized intersections; the collection of average daily traffic counts; and performs travel-time/delay studies on all subsystems at a **minimum of every two years**. This data is used to evaluate system operations and performance.
4. Timing plans for newly installed intersections are implemented in conjunction with the installation of the traffic signal.
5. The Municipality has an active, on-going operational performance program for operation of the traffic signal system in which system communication components and central site hardware is tested and evaluated on intervals of **no less than two times per year**.
6. A minimum of 90% of all system detectors are operational at any given time. The maximum time to repair failed detection devices is **30 calendar days**.
7. The control center is staffed by qualified personnel during the AM & PM peak hours, and during other times of high traffic volumes (e.g. special events).

8. The Municipality uses traffic responsive timing plans where appropriate and continually monitors and updates the thresholds.

Level-of-service "B"

1. Essentially all (+90%) of the signalized intersections in the Municipality's jurisdiction are monitored by the system. Practically all (+95%) of the monitored signalized intersections are actively controlled.
2. All timing plans and day plans are evaluated on intervals of no greater than **12 months**. On corridors with a significant annual growth in traffic volume (> 5.0%), new timing plans are identified annually. Required new plans are developed and implemented **within three months** of identification.
3. The Municipality has an active traffic data collection program that includes turning movement counts at all signalized intersections; the collection of average daily traffic counts; and performs travel-time/delay studies on all subsystems at a **minimum of every two years**. This data is used to evaluate system operations and performance.
4. Timing plans for newly installed intersections are implemented in conjunction with the installation of the traffic signal.
5. The Municipality has an active, on-going operational performance program for operation of the traffic signal system in which system communication components and central site hardware is tested and evaluated on intervals of **no less than two times per year**.
6. A minimum of 85% of all system detectors is operational at any given time. The maximum time to repair failed detection devices is **30 calendar days**.
7. The control center is staffed by qualified personnel during the AM & PM peak hours. The operations staff is on-call during other times of expected high traffic volume.
8. The Municipality uses traffic responsive timing plans where appropriate. Threshold values are evaluated **annually**.

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

Traffic Signal System Operations

Level-of-service "C"

1. The vast majority (+80%) of the signalized intersections in the Municipality's jurisdiction are monitored by the system. The only traffic signals not monitored are those whose lack of proximity does not lend them to cost-effective communication. The vast majority (+80%) of monitored signals are actively controlled by the system.
2. All timing plans and day plans are evaluated on intervals of no greater than **18 months**. On corridors with a significant annual growth in traffic volume (> 5.0%), new timing plans are identified **annually**. On average, required new plans are developed and implemented within **six months** of identification.
3. The Municipality obtains the data that is used to evaluate system operations and performance.
4. Timing plans for newly installed intersections are implemented within **30 calendar days** of the installation of the traffic signal.
5. The Municipality has an active, on-going operational performance program for operation of the traffic signal system in which system communication components and central site hardware is tested and evaluated on intervals of **no less than two times per year**.
6. A minimum of 80% of all system detectors are operational at any given time. The maximum time to repair failed detection devices is **60 calendar days**.
7. The control center is staffed by qualified personnel during the AM & PM peak hours. The operations staff is on-call during other times of expected high traffic volume.
8. The Municipality uses traffic responsive timing plans where appropriate. Threshold values are evaluated **annually**.

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

Traffic Signal System Operations

Level-of-service “D”

1. Most (+60%) of the signalized intersections in the Municipality’s jurisdiction are monitored by the system. Signalized intersections that are in close proximity to other signalized intersections (<0.5 mile) are in operation but are not monitored by the system. Most (+60%) of the monitored signals are actively controlled by the system.
2. All timing plans and day plans are evaluated on intervals of no greater than 24 months. On corridors with a significant annual growth in traffic volume (> 5.0%), new timing plans are identified on intervals of no greater than **two years**. New plans are developed and implemented within **12 months** of identification.
3. The Municipality obtains the data is used to evaluate system operations and performance.
4. Timing plans for newly installed intersections are implemented within **60 calendar days** of the installation of the traffic signal.
5. The Municipality has an active, on-going operational performance program for operation of the traffic signal system in which system communication components and central site hardware is tested and evaluated on intervals of **no less than one time per year**.
6. A minimum of 60% of all system detectors are operational at any given time. The maximum time to repair failed detection devices is **90 calendar days**.
7. The control center is staffed during either the AM or PM peak hour; whichever is the highest volume period.
8. The Municipality has not evaluated the use of traffic responsive timing plans.

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

Traffic Signal System Operations

Level-of-service "F"

1. Less than half (<50%) of the signalized intersections in the Municipalities' jurisdiction are monitored by the system. Signalized intersections that are in close proximity to other signalized intersections (<0.5 mile), are in operation but are not monitored by the system. Most (+60%) of the monitored signals are actively controlled by the system.
2. All timing plans and day plans are evaluated on intervals greater than **30 months**. On corridors with a significant annual growth in traffic volume (> 5.0%), new timing plans are identified on intervals of no greater than **two years**. On average, new plans are developed and implemented on intervals **not to exceed 18 months** after identification.
3. The Municipality does not collect data to evaluate system performance and retime signals. All data used is provided by others.
4. Timing plans for newly installed intersections are implemented **more than 90 calendar days** after installation of the traffic signal.
5. The Municipality does not have an active, on-going operational performance program for operation of the traffic signal system in which system communication components and central site hardware is tested and evaluated. The Municipality provides emergency restoration only for system communication and hardware components.
6. A minimum of 50% of all system detectors are operational at any given time. The maximum time to repair failed detection devices is **120 calendar days**.
7. The control center is staffed during either the AM or PM peak hour; whichever is the highest volume period.
8. The Municipality has not evaluated the use of traffic responsive timing plans.

APPENDIX II

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

SIGNALS LIST CITY OF FAYETTEVILLE

<u>SIGNAL LOCATION</u>	<u>CITY ID</u>	<u>STATE ID</u>
Raeford @ Fairfield		06-0001
Raeford @ Robeson		06-0002
Eastern @ Russell		06-0016
Bragg @ Hay		06-0018
Eastern @ Person		06-0029
Robeson @ Blount		06-0030
Bragg @ Elm		06-0032
Bragg @ Stamper		06-0033
Bragg @ W. Rowan		06-0037
Bragg @ Rowan		06-0038
Rowan @ Ray		06-0039
Grove @ Ramsey		06-0040
Eastern @ Grove		06-0041
Murchison @ Langdon		06-0042
Ramey @ Hillsboro		06-0044
Ramsey @ Whitfield		06-0052
Raeford @ McPherson Church		06-0054
US 401 Bypass @ Yadkin		06-0055
US 401 Bypass @ Murchison		06-0056
Robeson @ Village		06-0060
Clinton @ Cedar Creek		06-0072
NC 24 @ Cedar Creek		06-0076
US 401 Bypass @ Rosehill		06-0079
US 401 Bypass @ Ramsey		06-0081
US 401 Bypass @ Cain		06-0084
US 401 Bypass @ Cliffdale		06-0094
US 401 Bypass @ Morganton		06-0095
US 401 Bypass @ Raeford		06-0096
Bragg @ Shannon		06-0153
Raeford @ Hope Mills		06-0155
Ramsey @ Melstone		06-0211
Grove @ Ann		06-0218
Bragg @ Pearl		06-0221
Ramsey @ Cumberland		06-0223
Raeford @ Purdue		06-0224

Hay @ MLK Jr. Freeway W.		06-0231
Hay @ MLK Jr. Freeway E.		06-0232
Murchison @ Jasper		06-0234
Bragg @ Sycamore Dairy		06-0236
Ramsey @ McArthur		06-0237
Bragg @ MLK Jr. Freeway E.		06-0244
Ramsey @ MLK Jr. Freeway		06-0246
Ramsey @ Langdon		06-0250
Bragg @ Mike-Johnson		06-0265
Raeford @ Bunce		06-0274
Bragg @ Santa Fe		06-0279
Grove @ B		06-0314
US 401 Bypass @ AAE W.		06-0318
Raeford @ AAE W.		06-0320
US 401 Bypass @ AAE E.		06-0321
Raeford @ AAE E.		06-0323
Raeford @ Roxie		06-0327
Raeford @ Brighton		06-0328
Murchison @ Shawmill		06-0333
Raeford @ Montclair		06-0334
Eastern @ Gillespie		06-0336
US 401 Bypass @ Swain		06-0355
US 401 Bypass @ Louise		06-0356
Raeford @ Bingham		06-0358
Ramsey @ Andrews		06-0360
Grove @ Dunn		06-0371
Raeford @ Ireland		06-0422
Bragg @ Cain		06-0425
Gillespie @ Mountain		06-0427
Murchison @ Filter Plant		06-0445
Ramsey @ Stacy Weaver		06-0448
Murchison @ Shaw		06-0452
Ramsey @ Law		06-0474
Raeford @ Sandalwood		06-0491
Raeford @ 71 st School		06-0516
US 401 Bypass @ Campground		06-0521
NC 24 @ Plymouth		06-0535
Robeson @ MLK Jr. Freeway W.		06-0544
Robeson @ MLK Jr. Freeway E.		06-0545
Bragg @ Ames		06-0565
US 401 Bypass @ Richwood		06-0576
Raeford @ Time Warner		06-0592
Raeford @ Strickland Bridge		06-0596

Ramsey @ VA hospital		06-0609
US 401 Bypass @ Cross Creek Plaza		06-0705
Ramsey @ Rosehill		06-0748
US 401 Bypass @ Blanton		06-0751
Raeford @ Chilton		06-0767
Ramsey @ Northgate		06-0771
Ramsey @ Methodist College		06-0785
Raeford @ Old Raeford		06-0845
Eastern @ Old Wilmington		06-0910
US 401 Bypass @ K-Mart		06-0915
Eastern @ MLK Jr. Frwy NB-D		06-0916
Gillespie @ MLK Jr. Frwy N.		06-0933
Gillespie @ MLK Jr. Frwy S.		06-0934
Eastern @ MLK Jr. Frwy NB-B		06-0936
US 401 Bypass @ Chason Ridge		06-0979
Ramsey @ Kinlaw-Ridgeway		06-1139
US 401 Bypass @ Walmart		06-11.61
US 401 Bypass @ Red Tip		06-1169
Ramsey @ MLK Jr. Frwy S Ramp		06-1193
Ramsey @ Treetop		06-1200
Bragg @ Walter		06-1210
Ramsey @ I-295 Outer Loop		06-1223
Ramsey @ Lowes		06-1224
Robeson @ Levy		06-1230
Murchison @ Coley		06-1265
Ramsey @ Meadowcroft		06-1280
Ramsey @ Walmart		06-1281
US 401 Bypass @ Green Valley		06-1286
Bragg @ I-295 Outer Loop-Loop B		06-1300
Bragg @ I-295 Outer Loop-Loop D		06-1301
Murchison @ I-295 Outer Loop-Loop B		06-1302
Murchison @ I-295 Outer Loop-Loop C		06-1303
McArthur @ I-295 Outer Loop-NB		06-1304
McArthur @ I-295 Outer Loop-SB		06-1305
Ramsey @ Shawcroft		06-1313
Ramsey @ Northwood Temple		06-1314
Murchison @ Stadium		06-1329
Bragg @ Coalition		06-1341
Raeford @ VA Hospital		06-1345
Ramsey @ Summerchase		06-1369
US 401 @ Freedom Town Center		06-1370
Gillespie @ Southern		06-0004
Gillespie @ Blount		06-0006

Arsenal @ Broadfoot		06-0007
Hay @ Highland		06-0008
Russell @ Robeson		06-0010
Russell @ Winslow		06-0011
Russell @ Gillespie		06-0014
Russell @ Old Wilmington		06-0015
Morganton @ Churchhill		06-0047
Owen @ Gillespie		06-0051
Owen @ Village		06-0058
Legion @ West Mountain		06-0074
Owen @ Southern		06-0075
Owen @ Cumberland		06-0212
Southern @ Whitfield		06-0220
Cliffdale @ McPherson Church		06-0225
Morganton @ McPherson Church		06-0233
Person @ Broad		06-0240
Yadkin @ Santa Fe		06-0247
Robeson @ Franklin		06-0264
Owen @ Boone Trail		06-0270
Santa Fe @ AAE NB Ramp		06-0278
Santa Fe @ AAE SB Ramp		06-0281
Owen @ Camden		06-0289
Morganton @ Pinecrest		06-0290
Morganton @ AAE East		06-0319
Morganton @ AAE West		06-0322
Owen @ AAE		06-0324
Morganton @ Glensford		06-0346
Morganton @ Skye		06-0350
Morganton @ Cliffdale		06-0351
Village @ Ireland		06-0353
Morganton @ Sycamore Dairy		06-0361
Reilly @ Cliffdale		06-0364
Morganton @ Reilly		06-0369
Yadkin @ Bonanza		06-0370
Morganton @ Bonanza		06-0441
Russell @ Cool Spring		06-0443
Santa Fe @ Bonanza		06-0453
Cumberland @ Natal		06-0456
Owen @ Melrose		06-0457
Reilly @ Kimbridge		06-0482
Ireland @ Coventry		06-0486
Yadkin @ Filyaw		06-0508
Morganton @ Dobbins		06-0518

Cliffdale @ Glensford		06-0527
Morganton @ Cross Point		06-0530
Yadkin @ Southwick		06-0540
Cliffdale @ 71 st School		06-0541
Cliffdale @ Bunce		06-0542
Reilly @ Filyaw		06-0543
Morganton @ McFayden		06-0573
Cliffdale @ Tradewinds		06-0626
Morganton @ Ruritan		06-0688
Morganton @ Hearthstone		06-0689
Cliffdale @ Pritchetts		06-0741
Cliffdale @ Waters Edge		06-0742
Morganton @ Lock Haven		06-0856
Bragg @ Knox		06-0905
Bonanza @ Glen Canyon		06-0922
Reilly @ Rieglewood		06-0956
Glensford @ Campground		06-1008
Glensford @ Red Tip		06-1009
Yadkin @ Walmart		06-1148
Cliffdale @ AAE East		06-1182
Cliffdale @ AAE West		06-1183
Camden @ West Mountain		06-1195
Bonanza @ Bi Lo		06-1237
Yadkin @ Lake Valley		06-1257
Lake Valley @ JKAM Entrance		06-1258
Glensford @ Glensford Commons		06-1274
Santa Fe @ Antietam Creek		06-1325
Santa Fe @ Coalition		06-1326
Reilly @ Glenallen		06-1337
Reilly @ Jeffery		06-1338
Reilly @ Northumberland		06-1339
Owen @ Dallas		06-1351
Cliffdale @ Freedom Town Center		06-1371
Boone Trail Ext @ Boone Trail Center	C-001	
Cain @ Rogers	C-002	
Devers @ Hull	C-003	
Fort Bragg @ Churchill	C-004	
Fort Bragg @ Devers	C-005	
Fort Bragg @ Hull	C-006	
Fort Bragg @ Stamper	C-007	
Gillespie @ Franklin	C-008	
Green @ Old	C-009	
Hay @ Woodside	C-010	

Hay @ Ray	C-011	
Hillsboro @ Boundary	C-012	
Hillsboro @ Cumberland	C-013	
McPherson Church @ Barcelona	C-014	
McPherson Church @ Sycamore Dairy	C-015	
McPherson Church @ McPherson Square	C-016	
Person @ "B"	C-017	
Person @ Bow	C-018	
Pinecrest @ Rush	C-019	
Rosehill @ Chadwick	C-020	
Sycamore Dairy @ Bargain	C-021	
Sycamore Dairy @ Legend	C-022	
Village @ Boone Trail Extension	C-023	
Village @ Conover	C-024	
Village @ Fordham	C-025	
Village @ Metromedical	C-026	
Village @ Purdue	C-027	
Village @ Roxie	C-028	
Winslow @ Blount	C-029	
Winslow @ Hay	C-030	
Winslow @ Franklin	C-031	
Freedom Town Center @ Freedom Town Shopping Center	C-033	
TOTAL NUMBER OF CITY SIGNALS	32	
TOTAL NUMBER OF STATE SIGNALS	198	
TOTAL NUMBER OF ALL SIGNALS	230	
<u>PRO-RATA SHARE</u> SCHEDULE D	DIVIDE NUMBER OF STATE SIGNALS BY THE TOTAL NUMBER OF ALL SIGNALS	86%

APPENDIX III

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

CCTV CAMERA LIST CITY OF FAYETTEVILLE

PLACEHOLDER ONLY – REPLACE WITH SUBMISSION FROM
DIVISION/MUNICIPALITY

<u>CCTV LOCATION</u>	<u>CCTV ID #</u>
Ramsey @ Northgate	06-7037
Ramsey @ Meadowcroft	06-7038
I-295 @ Ramsey	06-7040
Morganton @ Bonanza	06-7041
Yadkin @ Santa Fe	06-7042
Murchison @ Country Club	06-7043
I-295 WB @ Murchison	06-7044
Bragg @ Shannon	06-7045
Owen @ Gillespie	06-7046
Gillespie @ Mountain	06-7047
Grove @ Eastern	06-7050
Bragg-Robeson @ Hay	06-7051
Robeson @ MLK SB	06-7052
Robeson @ Village	06-7053
Owen @ Village	06-7054
Owen @ Dyer	06-7055
Raeford @ AAF NB	06-7056
Grove @ Ramsey	06-7057
Murchison @ Langdon	06-7058
Bragg Blvd. @ MLK	06-7059
Ramsey @ Rosehill	06-7060
Ramsey @ Country Club	06-7061
Ramsey @ Bartow	06-7062
Ramsey @ MLK	06-7063
Cliffdale @ AAF S	06-7064
Skibo @ Morganton	06-7065
Skibo @ K-Mart	06-7066
Skibo @ Cliffdale	06-7067
Morganton @ Glensford	06-7068
Glensford @ Red Tip	06-7069
Morganton @ AAF	06-7070

Reilly @ Morganton	06-7071
Raeford @ Hope Mills	06-7072
Raeford @ Skibo	06-7073
US 401 @ Richwood Court	06-7074
Raeford @ Bunce	06-7075
Raeford @ VA hospital	06-7076
Cliffdale @ 71st School	06-7077
Bragg @ Santa Fe	06-7080
Bragg @ I-295 EB	06-7081
Santa Fe @ AAF N	06-7082
Santa Fe @ AAF S	06-7083
Skibo @ Lake Valley	06-7086
Skibo @ Yadkin-McPherson Church	06-7087
TOTAL NUMBER OF CCTV CAMERAS:	44

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

DETECTOR LIST CITY OF FAYETTEVILLE

<u>DETECTOR LOCATION</u>	<u>DET. ID #</u>
TOTAL NUMBER OF DETECTORS:	0

APPENDIX V

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

POSITION QUALIFICATIONS CITY OF FAYETTEVILLE

TRAFFIC SIGNAL SYSTEMS OPERATIONS MANAGER, OR EQUIVALENT

EDUCATION AND EXPERIENCE

- Graduation from a four-year college or university with a major in Civil Engineering or equivalent or a minimum of 6 years of progressive transportation engineering experience; or an equivalent combination of training and directly related experience in traffic signal operations.
- Operations experience and knowledge of ITS concepts, data communications, and computerized traffic signal systems equipment.
- Excellent planning and organizational skills. Excellent oral and written communications skills including the ability to make public presentations.
- Working knowledge of the principles and practices of traffic signal timing and microcomputer applications of traffic signal optimization software (e.g., Synchro 3.2, PASSER-II, PASSER IV, TRANSYT 7F, NETSIM).
- Working knowledge of AUTOCAD or MICROSTATION and PC-BASED programs including: MS Office (Word, Excel, Access, PowerPoint), GIS, and various software programs for traffic optimization and traffic analysis.
- Regular NC driver's license required.

ESSENTIAL DUTIES

- Oversees the activities of the computerized traffic signal system operation to ensure that all required functions, activities and tasks are performed in an effective, efficient and timely manner.
- Directly manages employees in a Transportation Management Center. Is responsible for the overall direction, coordination, and evaluation of the unit.

APPENDIX V

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

POSITION QUALIFICATIONS

TRAFFIC SIGNAL SYSTEMS OPERATIONS MANAGER, OR EQUIVALENT

ESSENTIAL DUTIES (CONT'D)

- Supervises staff in accordance with the organization's policies and applicable laws. Responsibilities include interviewing, hiring, and training employees; planning, assigning, and directing work; appraising performance; rewarding and disciplining employees; addressing complaints and resolving problems.
- Works with supervisor to manage staffing and work assignments. Supervises traffic signal staff by assigning tasks and reviewing work on a routine basis and provides ongoing guidance and feedback.
- Provides oversight for field investigations, collection and analysis of traffic data and Measures of Effectiveness (MOEs), computes traffic parameters to refine signal timing programs for optimum systems timing efficiency and develops time-space diagrams. Ensures new signal timing plans created by changes in traffic flow patterns, land-use and population are implemented.
- Responds to the complaints and concerns of the community regarding traffic signal design and intersection safety and efficiency.
- Reviews traffic signal designs for impact on general traffic flow and provides recommendations.

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

POSITION QUALIFICATIONS

TRAFFIC SIGNAL SYSTEMS OPERATIONS ENGINEER, OR EQUIVALENT

EDUCATION AND EXPERIENCE

- Graduation from a four-year college or university with a major in Civil Engineering and a minimum of 3 years of progressive transportation engineering experience; or an equivalent combination of training and directly related experience in traffic signal operations.
- Operations experience and knowledge of ITS concepts, data communications, and computerized traffic signal systems equipment.
- Outstanding planning and organizational skills. Excellent oral and written communications skills including the ability to make public presentations.
- Working knowledge of the principles and practices of traffic signal timing and microcomputer applications of traffic signal optimization software (e.g., Synchro 3.2, PASSER-II, PASSER IV, TRANSYT 7F, NETSIM).
- Working knowledge of AUTOCAD or MICROSTATION and PC-BASED programs including: MS Office (Word, Excel, Access, PowerPoint), GIS, and various software programs for traffic optimization and traffic analysis.
- Regular NC driver's license required.

ESSENTIAL DUTIES

- Plans, organizes, and directs the activities of the computerized traffic signal system operation to ensure that all required functions, activities and tasks are performed in an effective, efficient and timely manner.
- Performs field investigations, collects and analyzes traffic data and Measures of Effectiveness (MOEs), computes traffic parameters to refine signal timing programs for optimum systems timing efficiency and develops time-space diagrams. Develops and implements new signal timing plans created by changes in traffic flow patterns, land-use and population.

APPENDIX V

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

POSITION QUALIFICATIONS

TRAFFIC SIGNAL SYSTEMS OPERATIONS ENGINEER, OR EQUIVALENT

ESSENTIAL DUTIES (CONT'D)

- Prepares and installs timing plans (traffic responsive and time-of-day/day-of-week) for all corridors; prepares and implements special event timing plans; and prepares temporary timing plans for failed detector locations.
- Maintains system databases and modifies as necessary to allow for expansion; reviews and evaluates all signalized intersections for phasing optimization; provides system data for and assists with various traffic studies and analysis projects regarding the computerized traffic signal system.
- Provides assistance to the transportation operations staff in diagnostic and operational activities.
- Interacts with and uses the features of the signal system control software to develop and modify timing plans using PC-based timing plan software.
- Manages the traffic signal system operational functions including: operation of the graphics monitoring databases; performing periodic schedule data backup; assures the periodic image and graphic backups are accomplished and safely stored.
- Coordinates with the Department on roadway construction projects, which affect the traffic operations in the computerized traffic signal system. Develops and implements temporary timing plan strategies for construction work zones, alternate routes, and incident diversion routes.
- Maintains daily control logs, event logs, timing plan ledgers and daily summary reports.

APPENDIX V

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

POSITION QUALIFICATIONS

TRAFFIC SIGNAL SYSTEMS SPECIALIST, OR EQUIVALENT

EDUCATION AND EXPERIENCE:

- Graduation from a two-year college or university and a minimum of 1 year of experience in traffic signal operations; or an equivalent combination of education and experience directly related to traffic signal operations.
- Knowledge of traffic signal system operations, Intelligent Transportation Systems (ITS) devices, data communications and computerized traffic signal systems equipment.
- Working knowledge of the principles and practices of traffic signal timing and microcomputer applications of traffic signal optimization software (e.g., MIST software system).
- Thorough knowledge of; ability to pay attention to detail and respond to changes in conditions; ability to coordinate work with others.
- Excellent planning and organizational skills. Excellent oral and written communications skills. Ability to maintain records.
- Working knowledge of AUTOCAD or MICROSTATION and PC-BASED programs including MS Office (Word, Excel, Access, Powerpoint); GIS and various software programs for traffic optimization and traffic analysis.
- Regular NC driver's license required.

ESSENTIAL DUTIES:

- Monitors the operations of the computerized traffic signal system operation on a daily basis to ensure that all required functions are performed in an effective, efficient and timely manner.

APPENDIX V

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

POSITION QUALIFICATIONS

TRAFFIC SIGNAL SYSTEMS SPECIALIST, OR EQUIVALENT

ESSENTIAL DUTIES (CONT'D)

- Installs new or revised timing plans (traffic responsive and time-of-day/day-of-week) for corridors; implements special event timing plans and prepares temporary timing plans for failed detector locations through the use of Traffic System software.
- Monitors real time traffic operations through video sources to report incidents and special event information to the appropriate agencies (NCDOT, NC State Highway Patrol, Emergency Management, etc.) and the local Police and Fire departments.
- Performs traffic signal system operational functions including: maintaining the graphics monitoring databases; performing periodic schedule data backup; assures the periodic image and graphic backups are accomplished and safely stored. Coordinates signal repair work with operations staff.
- Coordinates with local TV stations and webmasters assuring periodic image and graphic are displayed and provided.
- Maintains daily control logs, event logs, timing plan ledgers and daily summary reports.

APPENDIX VI

MUNICIPAL OPERATIONS AGREEMENT – SCHEDULE D

COMPENSATION – CITY OF FAYETTEVILLE

MUNICIPAL OPERATIONS COMPENSATION ITEMIZATION

LEVEL OF SERVICE "C"

CITY OF FAYETTEVILLE COMPUTERIZED TRAFFIC SIGNAL CONTROL SYSTEM

MUNICIPAL OPERATIONS COMPENSATION ITEMIZATION

ITEM	UNIT	ANNUAL RATE	PERCENT (%) UTILIZATION	QUANTITY	PRO-RATA PERCENT (Appendix II)	PRO-RATED COST
FIXED ANNUAL COSTS REIMBURSEMENT SCHEDULE						
System Operations Engineer	LS	\$112,201.96	86	1	86	\$96,493.68
		\$				\$
PER ITEM REIMBURSEMENT SCHEDULE						
Centracs Warranty Cost		\$12,000.00		1	86	\$10,320.00
		\$				\$
TOTAL ANNUAL COST						\$106,813.68
PER INCIDENT REIMBURSEMENT SCHEDULE						
Per Incident Reimbursements shall consist of all costs associated with repairs and/or replacement of any equipment, software and supplies used to maintain operation of CITY OF FAYETTEVILLE Computerized Traffic Signal System at a pro rata share of 86%. This includes equipment or software such as, but not limited to: Central Computer Hardware & Software (KVM switch, servers, workstations, laptops, printers, UPSs, traffic management and communication software, etc.); Maintenance Equipment (test equipment, display boards and monitors, laptop, etc.); Communications cable and equipment (core switch, routing switches, media converters, GPS clock sync equipment, fiber modems, phone lines, dialup modems, serial multiport equipment, fiber interconnect centers, fiber patch panels, hub cabinets, ethernet cables, fiber materials and equipment, network management software, etc.); CCTV Equipment (camera assemblies and cabinets, encoders, decoders, master distribution amplifier, matrix bays, multiplexor, CCTV intelligent keyboards, DVR, switches, monitors, etc.); Office supplies (fax machine, printer repair and supplies, paper, pens, pencils and miscellaneous supplies).						\$ TBD As Needed

Note: Items included on this Schedule may be added or deleted to those above by written request, signed by a Municipal Representative. The letter should be sent in quadruplicate to the Division Engineer accompanied by four copies of the revised Schedule. If the Division Engineer approves the new schedule, he will sign all copies as APPROVED; then forwards one copy of the letter and Schedule to the DOT Controller, the LPMO Contract Officer, the Municipality, and retains one for Division file. The new Schedule will then become effective at the beginning of the next cycle for reimbursement. The Department of Transportation reserves the right to verify that all listed operations functions are being properly performed. If it is determined that any authorized operations function is not being performed, the reimbursement will be reduced accordingly.

ATTEST

CITY OF FAYETTEVILLE

CLERK

MUNICIPAL REPRESENTATIVE

 DEPARTMENT OF TRANSPORTATION
 DIVISION ENGINEER

Table 1. 2000-2001 Survey Data

Year	2000	2001
1	100	100
2	100	100
3	100	100
4	100	100
5	100	100
6	100	100
7	100	100
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100	100	100