

EXHIBIT B  
LONG FORM  
TRAFFIC SIGNAL MAINTENANCE PROVISIONS

**A. GENERAL PROVISIONS**

1. DOCUMENTATION

The GOVERNMENTAL BODY shall provide the supporting documents for the items being billed. The approval of an invoice is contingent upon the supporting documentation. If the GOVERNMENTAL BODY'S invoices are deemed by the DEPARTMENT or auditors to not be sufficiently documented for work completed, the DEPARTMENT may require further records and supporting documents to verify the amounts, recipients and uses of all funds invoiced pursuant to this Agreement. Furthermore, if any of the deliverables in Part 5 are not satisfactorily completed, GOVERNMENTAL BODY will refund payments made under this agreement to the extent that such payments were made for any such incomplete or unsatisfactory deliverable.

2. REFERENCES

All governing specification texts and manuals (ex: the Standard Specifications for Road and Bridge Construction, the Manual on Uniform Traffic Control Devices ((MUTCD))) cited and referred to herein shall be latest editions of those specification texts and manuals.

3. CABINET PACK

Wiring diagrams, phase diagrams, and manuals are required to be in each traffic signal controller cabinet at the time of construction completion shall remain in the cabinet. Written documentation of all traffic signal timing changes, repairs and maintenance activities shall be provided in the cabinet. All entries shall be written in a clear and concise manner. The agent of the maintaining agency making any entries shall provide his/her signature and date of entry. These shall be kept in the cabinet to assist the DEPARTMENT on emergency call outs.

4. HARDWARE SPECIFICATIONS

All equipment and material used shall comply with the requirement of the DEPARTMENT's latest edition of Standard Specifications for Road and Bridge Construction and the district special provisions. Maintain logs of equipment installation dates for warranty and for end of service life determination purposes. Catalog cuts shall be submitted to the DEPARTMENT for compliance with the district special provisions.

5. ROADWAY LIGHTING

Maintenance of roadway lighting on combination pole assemblies, including but not limited to lighting mast arm(s), luminaire(s), cable, fusing, and control shall be the responsibility of the GOVERNMENTAL BODY. Agreements regarding other roadway lighting equipment shall remain unchanged by this IGA.

The highway lighting system components of each combination mast arm assembly and pole shall be tested for proper operation and physical condition during the intersection cabinet inspection. All cost of inspecting and maintaining the combination pole lighting system equipment is the responsibility of the GOVERNMENTAL BODY. In addition to regular inspection and maintenance, replacing damaged or missing combination pole lighting system equipment is the responsibility of the GOVERNMENTAL BODY.

6. EMERGENCY VEHICLE PREEMPTION SYSTEM

Test Emergency Vehicle Preemption System (EVPS) equipment for proper operation and physical condition during the intersection cabinet inspection. All program settings and each sequence of operation must be verified to be correct during each inspection. All cost of inspection and maintaining the EVPS equipment, including the light detectors, light detector amplifiers, radio transmitters and receivers, antennas, confirmation lights, and cables and related components, is the responsibility of the GOVERNMENTAL BODY. In addition to regular inspection and maintenance, all cost of repairing or replacing damaged or missing EVPS equipment is the responsibility of the GOVERNMENTAL BODY.

7. TRAFFIC SIGNALS INTERCONNECTED TO RAILROAD WARNING DEVICES

At all locations with railroad/traffic signal interconnects, respond to any failure or damage and all emergency and all red flash alarms within one (1) hour and notify the DEPARTMENT and the Illinois Commerce Commission of any malfunction with railroad preemption equipment.

Traffic signal railroad preempt parameters including but not limited to the phase timings, phase sequences and pedestrian and vehicular clearance intervals shall not be modified without prior approval from the DEPARTMENT and the Illinois Commerce Commission.

Maintain unique spare controller data modules or sets of data chips containing the final railroad preemption parameters for each location.

Cooperate in any inspection as deemed necessary by the DEPARTMENT or the Illinois Commerce Commission. The interconnect controller cabinet shall display the location, the minimum preemption time and the railroad and the Department twenty-four-seven contact phone numbers. The display stickers one for the signal cabinet and another for the railroad bungalow will be furnished by the DEPARTMENT.

8. DAMAGE REPAIRS

Repair or replace any or all equipment damaged by any cause whatsoever within the time shown in the Response Table. Replaced equipment shall be new.

Response Table

ITEM	RESPONSE TIME	SERVICE RESTORATION	PERMANENT REPAIR (calendar days)
Cabinet	1 hour	24 hours	21 days
Controllers and Peripheral Equipment	1 hour	4 hours	21 days
System Detector Loop	1 hour	NA	7 days
All Other Detectors	1 hour	NA	21 days
Signal Head and Lenses	1 hour	4 hours	7 days
Aviation Red Beacon	1 hour	4 hours	7 days
Mast Arm Assembly and Pole	1 hour	4 hours	7 days
Traffic Signal Post	1 hour	4 hours	7 days
Cable and Conduit	1 hour	4 hours	7 days
Interconnect and Telemetry	1 hour	4 hours	7 days
Graffiti Removal	NA	NA	7 days
Misalignment of Signal Heads	1 hour	4 hours	4 hours
Closed Loop Monitoring System	1 hour	24 hours	14 days
Post and Poles Plumb Vertically	NA	NA	21 days
Controller, Post & Pole Foundations	NA	NA	21 days
Complaints, Calls, Controller or System Alarms, Timing, Phasing, Programming	1 hour	4 hours	NA
Patrol Truck Deficiencies	NA	24 hours	24 hours
Signal Heads Visibility	1 day	2 days	14 days

9. ACCIDENT DAMAGE

Be responsible to make recovery for damage to any part of the installation or system from the party causing the damage. Document damage to facilities and notify the Department of the damage to determine the required repair or replacement.

Whenever third-party claims cannot be recovered, the GOVERNMENTAL BODY shall share in the loss in accordance with the percentages shown in Exhibit A.

10. TEMPORARY TRAFFIC CONTROL.

Provide temporary traffic control during a period of equipment failure or for when the controller must be disconnected. This may be accomplished through the installation of a spare controller, placing the intersection on flash, manually operating the controller, or manually directing traffic through the use of proper authorities.

When work is within the traveled way, provide protection for workers and for traveling public by providing adequate traffic control. The traffic control shall conform to the latest edition of Manual on Uniform Traffic Control Devices.

11. EMERGENCY PERSONNEL

Provide skilled maintenance personnel who will be available to respond within one (1) hour to emergency calls. This may be provided by agency forces, contract, or maintenance agreement. Controller failure, lights out, knockdowns, or two (2) red lights out at intersection are considered emergencies.

**B. AS REPORTED OR OBSERVED**

1. SIGNAL ALIGNMENT

Keep signal heads properly adjusted, including plumb, and tightly mounted. All controller cabinets, signal posts and controller pedestals should be tight on their foundations and in alignment.

2. CONTROLLER PROBLEMS

Check the controllers, relays, and detectors after receiving complaints or calls to ascertain that they are functioning properly and make all necessary repairs and replacement.

3. LED SIGNAL HEAD AND LED MODULE REPLACEMENT

An LED module shall be considered failed and shall be replaced if at least one-fourth of the signal indication is dark or if the module fails to meet ITE specification on minimum maintained luminous intensity.

Replace failed modules for all red signal indications within twenty-four (24) hours of notification of failure or on the next business day following the notification. However, if two or more red indications for an approach are failed, these modules must be replaced as soon as possible, and under no circumstances longer than twenty-four (24) hours after notification. Replace all other failed modules within forty-eight (48) hours or next business day of notification of failure.

Provide replacement LED modules and LED signal heads that fully comply to the latest applicable Institute of Transportation Engineers (I.T.E.) specifications.

4. PAINTING

Painted signal components shall be repainted as necessary per the paint system's manufacturer's requirements.

5. The GOVERNMENTAL BODY shall also be responsible for maintenance of the installed street name signs on approaches to a State highway from a local road. Because of the value of street name signs to motorists, the GOVERNMENTAL BODY local agencies shall provide such signs at all named State highway intersections.

**C. WEEKLY**

**1. MASTER CONTROLLER SYSTEMS**

At locations that are a part of a closed loop signal system maintained by the GOVERNMENTAL BODY, repair any and all malfunctions in a timely manner so that the signals remain under the control of the master at all times.

As needed assist in the implementation of the signal system timing plans.

Maintain the central and closed loop signal system management software (Aries, Tactics, Centracs, etc.) on a PC or a server so that the signal system is monitored weekly. Check weekly by phone or location visit for any malfunction. Verify software accuracy to central office software.

Ensure that communications to master controllers and central signal systems (telephone lines, radio broadband connections, etc.) are functioning and report issues to service providers for repair. Where applicable the GOVERNMENTAL BODY shall utilize JULIE for locate services.

**D. BI-MONTHLY (Every 2 months)**

**1. CABINET INSPECTION**

Check the controllers, relays, and detectors to ascertain that they are functioning properly and make all necessary repairs and replacement.

Keep interior of controller cabinet in a clean and neat condition at all times. Replace filters per manufacturer's recommendations.

**2. OBSERVE SIGNALS**

Observe the signals at the time of the bi-monthly cabinet inspection. This involves stopping and watching for correct detection and timing operation.

**3. DETECTION TESTING**

Test and inspect vehicle detection inductance loops, loop detectors, and pedestrian detection during cabinet visit bi-monthly.

**4. VIDEO DETECTION TESTING**

Inspect, maintain, and clean all video detection and surveillance systems bi-monthly or as needed, to achieve clean lenses, and adjust for proper alignment and proper focus. This shall include system camera, lenses, camera housings and hood/shield, pan tilt, and zoom mechanisms and motors, mounting brackets and hardware, poles, microprocessors, controller, cables and communication equipment, and other related components. Maintenance shall include modifications to programmable detection zones.

**5. CONTROLLER CHECK**

When controllers malfunction, they shall be removed, repaired, and bench checked. The controllers shall not be removed for annual maintenance inspections.

This bi-monthly check should verify software with central office software and reprint cabinet pack timings sheet. Controller check shall occur during the bi-monthly cabinet inspection.

**6. FUSE AND BREAKER CHECKS**

Fuse and breaker checks should occur during the bi-monthly cabinet inspection. Replace burned out fuses or deteriorated breakers as needed.

**E. ANNUALLY**

**1. SIGNAL HEADS VISIBILITY**

Remove any obstruction blocking the line of sight of the traffic signal face to the motorist, including snow and ice. The maintaining agency shall trim trees, bushes or any other form of vegetation blocking said lines of sight. The maintaining agency shall remove, or order the removal of, any man-made obstructions such as signs or banner blocking said line of sight. Visibility for line of sight shall meet the standards established and contained in the Manual on Uniform Traffic Control Devices (MUTCD). All trimmed vegetation shall be legally disposed of by the maintaining agency off the right of way.

**2. ANNUAL HARDWARE INSPECTION**

Inspect all mast arm assemblies, mast arm poles, brackets (or other types of hardware) supporting traffic heads or pedestrian signal heads on an annual basis. The inspection shall focus on the structural elements of the mast arm assembly and must include a close-up arm's length investigation of the mast arm, pole, mast to pole connection, base plate, and anchor bolts.

The arm of the assembly shall be visually inspected at all signal head connections for any defects, such as cracks or buckles. Inspect the mast arm to pole connection for significant loss of section, cracks in welds or base metal, and deterioration of the connection plates. The bolts of the arm to pole connection shall be inspected for tightness and condition. Check the pole for external corrosion, impact damage, rust through perforation, deflection, distortion, or cracking. Closely inspect pole for corrosion near the base plate, especially if mounted on a grout bed. Check welds of the pole to base plate connection for cracks. Inspect base plate for section loss or deformation. Inspect mast arm anchor bolts for any corrosion or bending, and for loose or missing nuts.

Upon discover of any buckles or significant structural defects (loose or missing nuts, severe corrosion or dents, cracks in welds, plate or structure, etc.), take corrective action in a timely manner.

**3. ANNUAL CONFLICT MONITOR AND MMU TEST**

Test all conflict monitors and MMUs once every two years in accordance with manufacturer recommendations. Failed conflict monitors or MMUs shall be replaced with new units.

The GOVERNMENTAL BODY, upon request, shall submit copies of the CMU/MMU test reports to the DEPARTMENT. These reports shall be maintained pursuant to Part 2, Paragraph E., "Records Preservation" of the AGREEMENT.

**4. PAVEMENT MARKINGS**

Inspect pavement markings and replace as necessary to insure proper motorist, pedestrian, and bicyclist guidance – including green pavement markings for bicyclists. Insure that stop bars, symbols and crosswalks are in good condition.

In District 1, all work is the responsibility of the GOVERNMENTAL BODY. Whereas, in District 2 through District 9, the cost of pavement markings is shared between the DEPARTMENT and the GOVERNMENTAL BODY according to Exhibit A.