

Traffic Signal Maintenance Agreement - Appendix B

**CITY OF FRESNO, DEPARTMENT OF PUBLIC WORKS
TRAFFIC SIGNAL AND STREET LIGHT DIVISION
SERVICE PROVISION FOR THE COUNTY OF FRESNO**

This list of services is provided for traffic signals that are located in County of Fresno jurisdiction. The City of Fresno will only maintain traffic signals that are built to City of Fresno Standards.

List of services:

- **Preventative Maintenance Inspections (PMI's)**
 - **Type 1 Operational Check (General Traffic Signal Inspection - Annual)**
 - **Type 2 Operational Check (Conflict Monitor Inspection – Bi-Annual)**
- **Emergency 24-Hour Response**
- **Trouble Shooting, Equipment Testing, and Corresponding Repairs**
- **Review of Plans & Submittals**
- **Camera Installation/Maintenance**
- **Video Detection Installation/Maintenance**
- **Audible Pedestrian System Installation/Maintenance**
- **Emergency Vehicle Preemption Installations/Programming/Maintenance**
- **Rail Road Preemption Installations/Programming/Maintenance**
- **Bus Rapid Transit Installation/Programming/Maintenance**
- **Underground Service Alerts (USA's)**
- **Traffic Signal Construction Inspection**
- **Street Light Construction Inspection**
- **ITS Construction Inspection**
- **New Signal Activation**
- **Special Event Modifications**
- **332 Cabinet Testing**
- **Flash Requests**

Type 1 Annual Operational Check

Cabinet:

1. Replace filter (s).
2. Lubricate locks and hinges as needed.
3. Check fan and thermostat operation.
4. Check conduit sealant.
5. Check gaskets and seals, repair or lubricate as needed.
6. Remove graffiti, tape residue, signs, etc.
7. Spot painted as needed.
8. Inspect wiring and terminations for burnt terminals and/or damaged insulation.
9. Test GFCI receptacle prior to use.
10. Vacuum or blow out accumulated dirt / debris.

Controller:

1. Observe indicators for proper operation.
2. Verify that cards or modules are properly sealed.
3. Verify that connectors are secure.
4. Verify operation/timing per timing sheet.

Conflict Monitor:

1. Verify operation with watchdog trip.
2. Reset monitor.
3. Observe indicators for proper operation.
4. Inspect ribbon cable on "Plus" monitors for damage.
5. Verify that the program card is properly sealed.
6. Verify that connectors are secure.

Switch Packs:

1. Observe indicators for proper operation.
2. Verify that switches are properly sealed.

Flashers:

1. Observe indicators for proper operation.
2. Verify that switches are properly seated.
3. Check flash operation; Cabinet, Police & CMU.

Relays:

1. Check for burnt or overheated contacts.
2. Verify that relays are properly seated.

Clocks:

1. Check for correct time / DOW settings.
2. Manually verify output switch operation.

Preemption:

1. Simulate actuation, verify proper operation.

Coordination:

1. Observe that current plan is per TOD.
2. Check for correct time / DOW setting.

Signal Heads:

1. Inspect alignment and visibility.
2. Check for broken lenses.
3. Check for burned out lamps / LED's.
4. Check for missing / damaged visors and backplates.

Poles and Mastarms:

1. Check for missing / damaged hand hole covers.
2. Check anchor bolt hardware for tightness.
3. Check condition of grout.
4. Check plumb of pole.
5. Check for damage, dents, etc.
6. If painted, spot prime / paint as needed.
7. Remove graffiti, tape residue, signs, etc.

Pedestrian Push Buttons:

1. Check all buttons for proper operation.
2. Check signs for legibility.
3. Verify proper field operation.

Detector Loops:

1. Inspect roadway along loop perimeter for exposed wire / conduit, pot holes, missing sealant, etc.

Detector Amplifiers:

1. Verify that vehicles are being detected.
2. Verify appropriate call is registered in controller.

Pull Boxes:

1. Check boxes and lids for breakage.
2. Remove accumulated dirt and water.
3. Treat for insects, if needed.
4. Check for condition of grout.
5. Check for missing delineator posts.
6. Check duct seal.

Electrical Service:

1. Check lock for serviceability.
2. If pedestal, check meter window for clarity, spray with silicone.
3. Remove graffiti, tape residue, signs, etc.
4. Check duct seal.
5. Turn on and check safety lights.
6. If pole mounted:
 - a. Inspect conduit for damage.
 - b. Check ground connection for tightness.

Type 2 Bi-Annual Conflict Monitor Unit Test

Conflict Monitor: Testing as per CalTrans Model 210 Conflict Monitor Certification Report

1. Perform Diagnostic Test
2. System Timing Tests
3. Voltage Tests
4. Permissive Tests
5. Watchdog Tests
6. Logic GND Tests