

## **ITEM 9000-0001 – CLOSED LOOP SYSTEM UPGRADE**

DESCRIPTION – This work is the furnishing and installing an upgrade for the closed loop traffic signal control system including software, firmware, hardware at a computer located at the City of Reading Public Works facility and the City of Reading Police Department Traffic Division, with connection to the five (5) master controller locations at the intersections specified on the project plans and the PennDOT District 5-0 system computer, if required, for the coordination and monitoring of traffic signal systems.

MATERIAL – In accordance with Section 950.2, 952.2, 953.2, and as follows:

1. System software – Provide and install one copy of the latest revision of the Tactics and Applied Information Glance software to the municipalities' central computers. Provide a system to do the following:

- Communication with minimum of 16 On/Off Street Controllers.
- Manage Data Base for 16 On/Off Street Master Controllers and minimum of 24 intersection controllers per master.
- Provide Real Time intersection display.
- Monitor detector status.
- Log system events.
- Upload and Download system and intersection data base.
- Provide system status reports.
- Establish system time reference (battery backup).
- System malfunction diagnosis.
- Provide system displays (real time, 15 intersections minimum).
- Provide graphic displays for all system intersections.
- Provide Thumb drive containing of all system/communications software to the municipality and the Department of Transportation.
- Automatic adjust for daylight savings time.
- Menu driven commands.
- Provide system security codes with a minimum of two levels.
- Coordinate traffic flow in an arterial zone.
- Multiple traffic plan selection.
- Coordination backup.
- Expansion capability.
- Interconnection capability with another system.
- Operate in a manual mode.
- Traffic count capability.
- Traffic responsive operation.
- Monitor corridor progression.
- Windows based operating system

In addition, the master controller will independently report system readiness, programmable by the central computer. The following will be reported:

- a. Event reporting.
- b. Log Reporting.

c. Maintenance call reporting.

CONSTRUCTION – In accordance with Section 953.3 and as follows:

Provide and install software and internet access on the cities' computers. Contact the city service provider and provide and coordinate installation of service to the municipality's computer location with the city representatives. (Be responsible for any connection fees.) Connect internet service to computer. Establish system communications with on/off street masters. Implement time settings in accordance with the coordination plans and establish traffic signal systems data base. Install surge protection on master power and communication lines. Establish intersection graphics for all system intersections. Implement system graphics for master for the computer. All intersection and system graphics to be provided by contractor before the start of the 30-day testing period. Update the PennDOT District 5-0 system computer as necessary.

After successful testing of individual intersections, test each sub-system (on/off street master). Intersection and sub-system tests may run concurrently if all intersections in the sub-system are on-line. Conduct system testing after all sub-systems are on-line and have completed a successful 30-day test period.

Implement security codes and security levels. Provide training for representatives of the city and the Department. Training will take place at the Cities' Public Works facility as follows:

- Training: The training shall be provided for a minimum of six hours. Training for 10 people. The training session will occur during the 30-day system test. The training shall include a complete demonstration of the system, emergency procedures, operation, troubleshooting procedures and equipment operation.

#### Documentation

Provide complete and thorough manuals, maintenance procedures, schematics, and technical documentation of all components of the traffic control system. Have a factory system engineer from the manufacture's home office be available, on call, throughout the system testing period. Provide any and all revisions to the system software for a two-year period from the date of the completion of the systems test.

MEASUREMENT AND PAYMENT – Each. System complete in place per schedule:

50% payment upon delivery.

30% payment upon completion of the 30-day system test.

20% payment upon final acceptance.